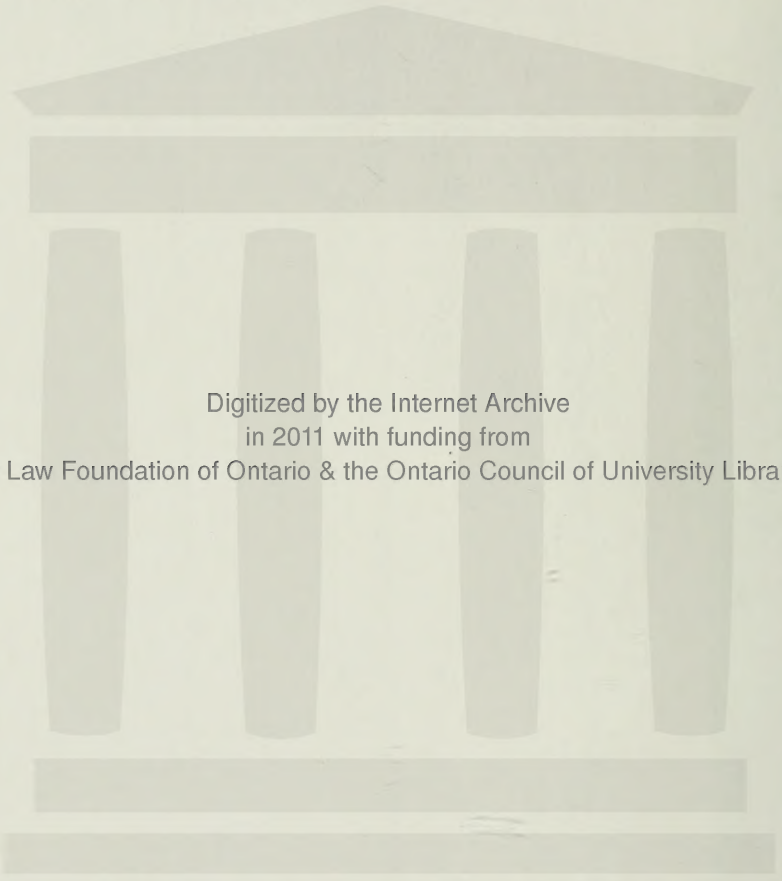

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REPORT

AND

SUPPORTING STATEMENTS

ON

Medical Education in Ontario

THE HON. MR. JUSTICE HODGINS
Commissioner

1917

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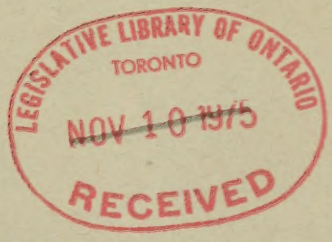

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REPORT AND SUPPORTING STATEMENTS ON MEDICAL EDUCATION IN ONTARIO

To His Honour Sir John Strathearn Hendrie, K.C.M.G.,

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

I have the honour to report that by your Honour's Commission, bearing date the 29th day of September, 1915, I was directed:

(1) To inquire into and to report upon:

(*a*) All or any matters relating to education for the practice of medicine in or affecting the Province of Ontario.

(*b*) The constitution, powers, duties, and regulations of any body corporate or unincorporated, and of any faculty or department thereof having any relation to medicine, the exercise of the same and the revenues and expenditures thereof.

(*c*) The situation, legal or otherwise, of such bodies in regard to each other or to the Province.

(*d*) The establishment, creation, control and regulation of any new body intended to have relation to medicine.

(*e*) The existing or possible methods of examining, licensing or otherwise authorizing the carrying on by individuals of the practice of any methods having any relation to medicine, and the standards prescribed and followed, or proper to be established and followed.

(*f*) The present positions, status and practice of osteopaths, dentists, nurses, opticians, optometrists, chiropractors, Christian scientists, or others practising or professing medicine.

(*g*) The existing laws of Ontario in relation to any of the foregoing and their practical operation, and:

(*h*) Any matter arising out of the foregoing which it is necessary to investigate with a view of the above inquiries; and

(2) To make such recommendations in regard to the above as I might think desirable.

In your Honour's Commission it was declared that the term "Medicine" therein should include any science, plan, method or system with or without the use of drugs or appliances, and whether now deemed to be included therein or not, for diagnosing, prescribing for, preventing, alleviating, treating or curing human disorders, illness, diseases, ailments, pains, wounds, suffering, injury or deformity affecting the human body or any part thereof or its physical condition, or believed or imagined so to do, including midwifery, and any treatment prescribed or advised, whether administered to, operated upon or followed by the patient himself, intended or professing immediately or ultimately to benefit the patient.

I have now the honour to report further that I have prosecuted the inquiries which I was appointed to make under your Honour's Commission, and have com-

pleted the same; and now beg to submit the evidence and statements made and papers put in before me as such Commissioner, together with my conclusions thereon, as well as certain recommendations which seem to follow upon those conclusions.

In doing so, I have divided my report, for the purposes of convenience, into two parts. First, the general report, and, secondly, the supporting statements, referring in greater detail to the matters dealt with in the paragraphs of the general report. In this way it will be possible to obtain a clearer idea of the various subjects dealt with, many of which I have felt obliged, owing to their importance and intricacy, to treat somewhat in detail in the supporting statements.

I have endeavoured, so far as possible, to elicit the opinions of those representing or supporting any of the many divergent views expressed before me, and to get information from every available source. In so doing, I have visited 14 cities, 5 of them more than once, inspected 17 institutions and heard the evidence or opinions of 207 persons, many of them more than once.

I have added a statement, in the form of an appendix, showing the names of those heard, and of the places and institutions visited and inspected in the course of my investigations.

I have also the honour to transmit herewith a number of papers, documents and pamphlets which are not incorporated herein. These contain much interesting and useful information, and are accompanied by a list giving the subjects and authors.

The questions involved in the Commission on Medical Education are interesting and of great practical importance. In dealing with them it is, of course, necessary to get clear ideas of what medical education means and also what it aims at. I have, therefore, felt myself obliged to come to a definite conclusion on this phase, which I have stated elsewhere in this report, adding thereto my reasons.

But, as the various subjects involve in one way or another some definite action or proposed change, I have given this latter aspect the first place.

To deal with these problems as if they were matters of logic or debate, as was done by many that appeared before the Commission, would be to ignore the real existing conditions, and the human and business relations involved.

I have, therefore, endeavoured to consider them all from the point of view of the public—which, by the way, did not interest itself at-all actively in the inquiry—and with an appreciation both of the responsibility of the Province for the public health, and its duty, equally important, of allowing the individual citizen reasonable freedom of action. The whole subject seemed also to require a thorough inquiry into the standing, capacity and numbers of those who desired to bring about any radical change, as well as into the educational record and constitution of the bodies advocating or resisting it, and a candid consideration of the results to all of those parties and to the interests of the public of the Province as well.

There are things desirable in themselves which may be bought too dearly. I have, consequently, not sought to arrive at any conclusion without weighing both its intrinsic value and also its probable effect in relation to present conditions.

If I have not succeeded in my diagnosis, nor in the remedies proposed, I can at least say that there are not wanting in the proceedings before me indications that such a result is not unknown among those chiefly interested in the inquiry.

The supporting statements, to which reference has been made, will enable those interested to ascertain both the information which was before me and the sources of it, as well as the arguments made in reference thereto, and also the many reasons and conditions which I have had to deal with, whether presented to me or not.

The evidence shows what sittings were held, and I have mentioned in an appendix to the report the places and institutions visited, and the names and qualifications of those who have in one way or another aided by their testimony or statements the elucidation of the questions arising out of the subject in hand.

Medical education at the present time and for many years back, dating at least from 1865, has been in the hands of the regular medical profession. Since the medical schools were absorbed by the universities, very striking progress has been made in providing educational facilities for students, the resources of the Government having been, as a matter of fact, placed more or less at the disposal of the universities.

Coincident with this, great development has taken place in research and laboratory work, so that at the present time the system of medical education in Ontario is completely in the hands of the universities. The sole and only function of the College of Physicians and Surgeons, which was incorporated in 1869, is, and apparently always has been, that of examining for license to practise medicine in Ontario. Even that function has been considerably reduced by the voluntary acceptance of the university examinations in all except three subjects, viz.: medicine, surgery and obstetrics. In other words, subject to such curriculum as is fixed by the College of Physicians and Surgeons, proficiency in and knowledge of the research and laboratory branches of medicine are determined wholly by the university which educates the student and by the extent of its equipment. It is only in the subjects which form the working knowledge of a physician that the College of Physicians and Surgeons, through its Medical Council, certifies, by its license to practise, the qualification of the medical man.

The practice of medicine has not been defined by the Medical Act, R.S.O. (1914), C. 161. This has caused confusion as to its legal meaning, which has been considered in prosecutions under the Medical Act and by the Court of Appeal of this Province. The result of these may be summed up as follows:—

(1) That practising medicine means any method and means or courses of treatment known to medical science and adopted and used by medical practitioners registered under the Act, or advised or prescribed treatment for disease or illness such as would be advised or prescribed by regular practitioners.

(2) This is subject to a qualification looking to the progressive development of medical science, which, in view of the Court of Appeal, might require this definition to be widened to include other methods and courses of treatment.

The decisions upon cases where persons were prosecuted under the Act for practising medicine are not very helpful, and all illustrate the difficulty, first in defining "Medicine" as a term of art, and then in knowing what new method is within the meaning of the present undefined expression.

Osteopaths were in 1910 held by Morson, Co. Judge, not to be within the Act; but in no other case have any of the so-called irregular schools of medical thought or practice been specifically and by name dealt with.

It may be said, however, that, in view of the opinion of the Court of Appeal, it would be impossible to convict anyone of contravening the Medical Act unless it were shown that the specific method adopted was one used by registered medical practitioners. Therefore, whatever success the latter could have in prosecuting would naturally depend upon how far they were using and adopting methods that they were denouncing as unsound.

This was the state of affairs at the time Sir James Whitney, Prime Minister of Ontario, undertook, in June, 1913, that the Government would investigate the

whole matter of medical education, it being arranged at the same time that no prosecutions were to take place pending the inquiry.

Whatever might be the position of those outside the regular medical profession at the time when Sir James Whitney made this promise, it is not possible after that date to say that any practitioners have established themselves in Ontario in such a manner as to have secured a status or to have been possessed of anything known as a vested right to practice. It is true that the promise of Sir James Whitney did not alter the law, but there was contained in it an indication that matters were to be considered as in solution and were to be determined after the report of a commission which he would appoint, so far as the Legislature approved of its findings. It is, therefore, to my mind not only fair to those who were practising in Ontario outside the regular medical profession to ascertain exactly their numbers, qualifications and nationality, but also necessary in the interests of the inquiry that the numbers of those who came in since Sir James Whitney's announcement should, with the same information, be clearly ascertained.

The education supplied in the Province of Ontario, through the medical faculties of the universities, is broad, thorough and progressive, but it practically excludes those who now seek admission to practice without disability. Their education, however, has necessarily taken place in various states of the American Union, where the standard and length of course and training vary essentially. It is, therefore, not possible to group together all those now asking for a change in the law as one united body whose qualifications and medical attainments can be accurately gauged. Regard must be had to the various institutions of learning from which they came; to the state law under which they have been admitted to examination or license; and to their experience, judged by the date of their graduation, and their opportunity since then of acquiring any further or post-graduate information.

It is important to know their respective numbers, and their scholastic and medical training and attainments.

Following that branch of the inquiry comes the more important one, viz.: Have they made out a case for an alteration of the present law, if it be prohibitive, or for a definite pronouncement from the Legislature that they or any of them must be allowed to practise the healing art without let or hindrance or upon fulfilling some condition?

A satisfactory conclusion on this point can only be arrived at by a consideration of the present position, both here and in the United States and elsewhere, of these individual schools and cults, and by a study of the situations which these schools of medical thought or philosophy, into which those urging the change are divided, now respectively occupy, and their prospects in the future. They flourish most in the various states of the American Union.

Before dealing with this broad question, and with the others which have been presented to me, I desire to put in the forefront of my report a subject which I deem to be of the most pressing character and of great importance to the public not only in this Province but in the Dominion.

The tremendous results of the war in bringing together in such a continuous stream and in such vast numbers men suffering in muscles, joints and nerves, from wounds and shock, have compelled the profession to rely for the after cure on physical appliances and methods for complete restoration after the primary cure has been effected. The need to re-educate and restore the enormous number of incapacitated

men is so pressing a national problem, and one of such commanding importance that the best minds in the medical world are directed to an immediate solution of the question. What has been done in this direction in France and England is little short of marvelous, and in any scheme of medical education after the war physical therapeutics and physical appliances will have a large and important place.

Dr. L. F. Barker, who succeeded Sir William Osler in the Chair of Medicine at Johns Hopkins University, stated to me that:

"Scientific therapy has, in modern times, through the untiring work of many clinical investigators, reached a high degree of development. A host of curative methods have been devised, and, gradually, the special indications for their application have been worked out. Instead of the purely empirical therapy that preceded it, we now have a more rational science, founded on scientific, critical and experimental biological studies. Modern therapy includes dietotherapy, pharmacotherapy, hydrotherapy, thermotherapy, climatotherapy, massage, gymnastics, electrotherapy, roentgentherapy, radiotherapy, serotherapy, bacteriotherapy, psychotherapy, occupational-therapy and still other forms of therapy in addition to the treatment that can be given by surgeons, orthopædists and trained nurses."

To quote E. Fortescue Fox, M.D., of London, England, Honorary Medical Director of the Red Cross Clinic for the Physical Treatment of Disabled Soldiers, in his recent (1917) book on "Physical Remedies for Disabled Soldiers":

"Physical treatment is the convenient term which denotes the remedial use of these closely related physical forces. It may now claim to be a special department in medicine, not in respect to the organs or diseases treated, but in respect to the remedies employed. The practitioner who at the present time chooses to devote himself to it will have a double reward, not only by making a sensible contribution to the vast problem of the restoration of the wounded soldier, but also by adding something of permanent value to medical science and art."

Canada will need to improvise, as those nations have done, and will also have to incorporate permanently into her educational policy the teaching and practice of this most important branch. This is the more necessary since the adoption by the Province of the Workmen's Compensation Act. The advantages conferred on injured workmen under that legislation, the lessening of the burden on employers, and the physical and mental benefits to the employees would be immeasurably increased if there were provided a means of re-educating men who have been injured so that they might not only recover their health and strength but their adaptability for work. This is one of the object lessons of the medical history of the war, and necessary as it is in justice to the men who have served the Empire in the field, it is equally due to those who, while at work, or in the course of their lives have become incapacitated by accident or disease, that efficient action should be taken to enable them to benefit by its application.

The following statistical results of physical therapy treatment as applied abroad have been published, and may be quoted:

"A total number of 3,348 soldiers suffering from disability of all kinds received a full course of treatment, and were discharged from the hospital within a period of six months. Of this number 2,676 (80 per cent.) were cured, or so greatly ameliorated as to be sent to their depots; 457 were recommended for the auxiliary services, and 215 for discharge from the army."

(Prof. Jean Camas, Director of Physical Treatment for the Military Government of Paris.)

"Figures have also been published with reference to the Anglo-Belgian Hospital at Rouen. Of 2,020 convalescents discharged after a course of physical

treatment, 1,170 (or nearly 58 per cent.) were completely cured and rejoined their depots; 670 (or 33 per cent.) were recommended to the military institute for industrial training; and 180 (or 9 per cent.) to homes for invalids."

("L'Hôpital Belge," Dr. Armand Deltenre.)

The same authority quotes some earlier statistics showing the result of physical treatment and training of men disabled by accidents in civil practice. They included many cases of the most serious forms of crippling. The figures cited show that about 80 per cent. of the total number have partly or wholly recovered their power of work. Of this 80 per cent., more than one-half (45 per cent.) were able to earn their livelihood, after a course of training, either in their former occupations or in others better suited to their disability. The remaining 35 per cent. could only work in a fragmentary and occasional way.

Dr. Fox himself remarks:

"This is not the place to set forth the economic results that may be expected to flow from the even partial restoration to active life of so large a percentage of the men crippled from wounds in war. The argument is partly financial and partly economic. As regards the financial aspect of the question, figures have been published in France showing that an average reduction in the mass of physical disability of, say, 20 per cent., which is not an extravagant claim for a properly organized physical clinic, has effected an automatic saving to the state, in the charge for pensions and gratuities, of nearly two millions sterling per annum. On the economic side, the saving of men for the industrial life of the nation may be even more important." (It should be noted that under the French Pension Law the permanent allowance is not fixed until the final treatment has been given and the soldier is discharged.)

Captain Sir Henry Norman, Bt., M.P., in his most valuable report to the War Office in October, 1916, on the Treatment and Training of Disabled Soldiers in France, makes the following statement:

"The French, as already said, include among the 'mutilated,' men suffering from impaired muscular or articular functions. Such injuries they call 'functional wounds,' as distinct from amputations.

"Men thus disabled are sent to a Centre of Physiotherapy, where all the different curative methods included under that general title are practised. These may be shown as follows:—

"Physiotherapy:

"Mechanotherapy.—Treatment by mechanical appliances. Largely Zander system.

"Thermotherapy.—Treatment by heat, electric light baths, blue light baths.

"Hydrotherapy.—Treatment by water, whirlpool baths, etc.

"Kinesitherapy.—Treatment by movement, re-education in walking, gymnastics, massage.

"Electrotherapy.—Treatment by electricity. Faradic, galvanic, and high frequency currents, and ionic medication.

"Radiumtherapy.—Treatment by radium emanations."

. . . "Striking figures have been furnished me showing these results accomplished. During the month of December, 1915, 411 patients were cured and restored to the ranks, their average incapacity on entering having been 28.11 per cent., and on leaving 0.96 per cent. To base and auxiliary duties 56 were sent, and

22 were recommended for discharge. The capital sum represented by the difference between the pensions which would have been payable by the state to these men if they had not been treated, and the pensions payable to them after treatment—that is, the financial gain to the state—is stated at 2,989,080 francs, say £116,000 from one month's work.

"During the four months ending December 31st, 1915, 1,780 'functionally wounded' men, whose morbid condition had existed for an average period of six months before their treatment, were returned to the military depots, 290 to base duties, and 92 recommended for discharge, at a gain to the state on their pensions and allowances represented by a capital sum of 10,000,000 francs, say £400,000."

These unexampled results are the more remarkable when it is considered that, to use Sir Henry Norman's language, "It should be clearly realized that the main object of this institution is to restore functionally disabled men to the fighting ranks. When this is impossible, the object is so to improve their condition as to reduce the amount of pension that will be payable to them by the state on account of their incapacity for work. That is, the objects are first military, and second economic."

Major R. Tait McKenzie, M.D., R.A.M.C.—himself a Canadian and graduate of McGill University—was in command of one of the Command Camps in England established for a similar purpose. He was in command of Heaton Park Camp, and speaks from personal knowledge and observation.

In an address delivered on the 21st of July, 1916, before the Royal Society of Medicine, he said:—

"The cases too tedious for the hospital and convalescent camp are more difficult to provide for and dispose of . . . and it was not until last autumn that the Director General was able to give his attention to these cases that had begun to accumulate in considerable numbers. He arranged a series of Command Depots, commanded by a combatant officer for discipline, with medical officers attached, and to them have been sent all for whom there was some hope of cure or improvement, within a period of six months.

"The objects of these depots were to return every available man to active service by treatment; to return men fit for light service abroad who could replace fit men in light duties on lines of communication; to fill positions requiring light duty at home by men who were unable to do anything more than to release a better man for active service; and to discharge from the army those for whom no treatment could be expected to give further results."

I had, as Commissioner, the advantage of hearing Major McKenzie personally, and he stated that during the short time he was in command at Heaton Park there were 1,200 men treated by physical therapy sent back to the firing line who would not have gone back otherwise, and that in April, 1917, there were sixteen such camps in operation in Great Britain and Ireland.

In the address from which I have quoted he analyses the results obtained:

"At Heaton Park an analysis of all classified cases sent out up to date shows that out of all men discharged nearly 50 per cent. have been rendered fit for active service, and have rejoined their units in the fighting line; about 15 per cent. have been sent to lines of communication abroad; 15 per cent. have been sent to useful work of a sedentary character at home; and 20 per cent. have been discharged as 'permanently unfit,' many of these being untreatable from the first."

This is a concrete and wholesale example of the immense benefit to be derived from the system adopted in these camps, i.e.: the co-ordinated use of modern methods of physical treatment which have received their impetus from the vast

numbers of men whose condition demanded careful and systematic strengthening by the adaptation of methods hitherto neglected.

Events have thus compelled the medical profession to turn their eyes to the crying need for such methods as will prevent the tremendous economic and social loss of power and movement among those whose care and well-being must, for years to come, be the first care of the nation.

A man with joints or muscles stiffened, contracted or paralyzed is turned out of the surgeon's hands only partly cured. His life's happiness depends upon restored power of motion, and it is the duty of the medical profession, and of the state, in this epidemic of wounds to secure that for him.

I have inspected the equipment in hydrotherapy, electrotherapy and the physical appliances for re-education in the Toronto General Hospital, the Hotel Dieu, and the Royal Victoria Hospital in Montreal; in the University of Pennsylvania, in Philadelphia; in the Johns Hopkins' Hospital, in Baltimore; the Zander room in the Massachusetts Hospital, in Boston; Dr. Benham Snow's very extensive equipment in his establishment in New York; as well as those in the Military Orthopædic Hospital on Davisville Avenue, Toronto, and Dr. Bott's methods and facilities in the Hart House in Toronto. In this latter is seen the germ of what I hope will be extended far and wide, both in the interest of the soldier and the civilian.

To my mind, the institution of these facilities for combined physical treatment, and the effective incorporation into the system of medical education of practical instruction in their use and theory, are the most pressing of the problems connected with medical education which exist to-day; and I have no doubt their importance is being and will be more quickly recognized as the inflow of our incapacitated soldiers increases. Its consideration is forced upon us now by passing events, but it is not a mere temporary expedient, but rather a scientific and rational attempt to give nature a chance to do its own healing work.

There are two different though closely related requirements to be met. One is adequate and up-to-date provision in the larger centres of population for the daily use of these methods of relief and encouragement, not only to the returned soldiers, but to those suffering from the results of industrial and other accidents, as well as to those whose disabilities have hitherto been regarded as chronic. The other is the complete fitting up, in connection with the Physics Departments of the Universities, of rooms with modern equipment in all its branches of this therapy, so that both students and medical men can be instructed not only in theory and practice, but in intelligent research and investigation of the principles of physics underlying them.

The need for this was very fully discussed by Professor J. C. McLennan just before his departure for England. This department would allow and promote development as well in intelligent use as in adaptation and improvement. The first must be provided in the hospitals or in buildings attached to them and specially fitted up, to which the public as well as hospital patients may have ready access. The second lies at the door of the universities, and towards both of these there should be generous public assistance. I have been favoured with a sight of the time-table for the lectures on X-ray and physical therapy which it is proposed to institute in Toronto University and the General Hospital. There will be twelve lectures and thirty clinical demonstrations. This is a step in the right direction, but a very much more extensive and intensive equipment and instruction is needed properly to cope with the subject as it is now opening up.

The equipment and rooms for the administration of physical therapy in the Toronto General Hospital (and, judging from the information supplied, the same would be the case elsewhere) are merely those needed for hospital work where the patient can be at once removd to his ward (pp. 2710-2719). This is a quite necessary part of a proper hospital, but it does not in the least answer the purpose of a properly built and equipped physical therapy institute or building, such as I suggest. In the latter there should be an assembling of all the accessories needed for all physical treatment, and with such spacious, suitable and comfortable operating and rest rooms that the whole surroundings would be convenient and also thoroughly attractive. The contribution made by the appeal of cheerful and airy quarters to the recovery of the sick is being made more evident every day, and in all modern buildings where health is being mended this important factor is predominant.

At the present time the means for physical treatment can only be found in private sanatoria and in some health resorts. In the hospitals there is some, but not enough, provision for combined treatment, and the methods employed are, therefore, restricted.

The suggestion of the "physical clinic" and the reasons given in its support commends themselves thoroughly to me.

It is thus described by a well-known authority: "Various methods have been proposed for getting over this difficulty (i.e., that caused by the imperfect conditions just mentioned). In some other countries it has been found possible in one way or another to make the installations for physical treatment, and the service of an expert hospital staff available for the public at large. The practitioner is invited to make use of the department, and to consult freely with the specialist medical officer in regard to the treatment of his patients. The department becomes in this way a centre of clinical study for all who are interested in either the scientific or practical side of this form of medical treatment. In spite of obvious inconveniences it cannot be denied that much good has resulted from endeavours of this kind to enlarge the scope of hospital practice.

"Now that the wide need for physical remedies is recognized in the British Islands, and also the necessity that they should be applied with skill and precision, it may be considered desirable that a similar development should take place in some of the British hospitals, such of them as are adapted for meeting this special want in the great centres of population. On the other hand, it is possible that, at all events in many localities, new needs will in the long run be best met by new institutions. In any case, it is for the medical profession itself to provide and administer the necessary facilities.

"Apart from the hospitals, at the present time the means for physical treatment are confined to private sanatoria and to the spas and other health resorts. It is true that at some of these a wealth of physical remedies is to be found, but the fact remains that the medical practitioner who wishes to employ a systematic physical treatment must needs recommend his patient to a sanatorium or a health resort.

"This deficiency has been sharply accentuated by the war. It has been found that many thousands of soldiers stand in need of physical treatment which they cannot obtain in the hospitals. It is impossible to send them all to the health resorts, and even these lack the methods and machinery necessary for such large numbers. In many of these cases experience has shown that piecemeal physical treatment is of but litle value; that massage alone or electricity alone, or even

these in combination, are insufficient; and that, to obtain the best results, a prolonged course of systematic and combined physical treatment is necessary.

"The object of a physical clinic is to supply that want, to provide for the use of the practitioner all the necessary elements which make up one entity. Disjointed, they are insufficient; united, they have a great and enhanced value. The several physical agencies employed—heat, cold, electricity, radiation, movement—are adjusted and proportioned to the needs of each case. They reinforce and succeed one another in a natural sequence, producing a gradual and cumulative effect."

It is interesting and encouraging to note what Dr. Fox says in his book of the part taken by the Province of Ontario and the Dominion of Canada in regard to this particular work of recuperation. After quoting the experience of Capt. E. Ryan, C.A.M.C., at the Rockwood Hospital for the Insane at Kingston (now in medical charge of the Unit "D," Military Hospitals in the Toronto Military District) as to the sedative pool bath, Dr. Fox says:

"At the Ontario Hospital at Orpington we have used these baths in cases of shell shock. Two instances that I may mention will illustrate the work. One case admitted to the hospital deaf and mute was quite depressed. We gave him treatment in the continued bath covering a period of nearly two weeks. The patient recovered hearing and voice, gained in weight and has left the hospital. Another case was admitted with marked excitement; this patient was also deaf and mute, was very irritable and would jump at the lightest touch. He was placed in the continued bath daily, and made a very satisfactory recovery. The patients at Orpington now realize the value of the bath, and take very kindly to the treatment.

"It has also been used in surgical cases for septic wounds. To illustrate; one case, a gunshot wound in the knee, became very septic, abscesses forming freely, dissecting the muscles both above and below the knee. He was placed in the bath when his condition was at the worst, and when there were marked symptoms of constitutional toxæmia. The wounds cleared very satisfactorily, the temperature fell, the patient's appetite markedly improved, although, unfortunately, we found it necessary on account of severe hemorrhage to amputate the limb."

In a later part of the book he refers to Canadian work, and says:

"For a striking illustration of combined treatment and training the reader may be referred to the 'therapeutic work' carried on in the hospital and workshops of the Canadian Military Hospital at Ramsgate. Captain D. A. Clark, C.A.M.C., has described the methods of the medical service at this hospital, which receives many cases of disablement of great chronicity, some of which have long resisted treatment and passed from hospital to hospital. A series of rooms is equipped with therapeutic apparatus, comprising various forms of electricity, 'eau courante,' needle, shower, plunge and Scotch douche baths; and appliances for radiant heat and light. Massage is given under the supervision of the medical officer in charge.

"The educational department comprises workshops and a gymnasium, as well as light duties of various kinds, athletic sports, and indoor recreations. The gymnasium is provided with a complete equipment of mechanical appliances and some original devices for the special education of individual muscle groups. The patient is placed under trained instructors with medical supervision, and enters one or more of the special classes, or undergoes general exercise or Swedish drill. In the light duties he is encouraged to undertake some work suitable to his disability and agreeable to his personal inclinations. He may choose the ordinary hospital light duties, such as clerical work, ward duties, etc., or take a position in

one of the departments of arts and crafts—the machine shop, carpentry, cabinet work, wood-carving, cigarette-making, printing, tailoring, cobblery, saddlery, market or landscape gardening, etc."

Dr. Clark adds: "Apart from its therapeutic value, the educational department makes the hospital largely dependent on its own supplies. The splints, surgical appliances and a large part of the gymnasium apparatus are constructed by the patients, and the carpentry and cabinet work, electrical and motor repairs, etc., are carried out by them. In this way the patient's interest is diverted from himself, his aches and pains; he is happier and more contented and his recovery is all the more rapid."

These extracts indicate that Ontario has early begun to appreciate the opportunities that lie in this direction.

It will no doubt be said by objectors that while to a limited extent electricity, baths, massage, etc., are good, there may be a point beyond which their use degenerates into faddism. I am not competent to decide upon that suggestion. I prefer to abide by results already obtained under the unusual and compelling stress of war. Masses of injured men, if they were not to become permanent cripples, had to be medically treated, and at once. The system of treatment, its reason, scope and limitations, had to be evolved and learned "at the double," as it were. The novelty is not that these agencies are good, but that their combined and persistent use accomplished what could not be done by any of them singly, and that observation and record of the cures as they proceeded disclosed or suggested to the physician new avenues of healing which had not previously been dreamed of. Indeed, the success obtained has been most gratifying and encouraging, and in some respects startling.

It was to meet the pressing needs of the British and French armies for more men that this therapy was instituted and carried on. And the end to be obtained was to fit these wounded men for the hardest of all lives, i.e., fighting in the front line. So that even under the strain of war, and for its iron purpose, men were restored to their normal condition; and now that it is necessary to study the methods of amelioration for the altered conditions of so many of our soldiers, there is no better answer to be made to those who still prefer to criticize and stand still than to recall Sir Arbuthnot Lane's remark that the bonesetter has profited by the inexperience of the profession, and by the tendency which exists among its members of "adhering blindly to those creeds whose only claim to consideration is their antiquity."

I believe there is truth in the statement of Dr. Dickson made before me that while many prominent physicians and surgeons and many hospitals admit that physical methods are of value, very few appreciate the full extent of their usefulness, and the bulk of the profession know nothing whatever about them, nor how to employ them properly.

This state of affairs he attributes to the failure of the medical colleges to instruct their pupils in this branch of therapeutics. It must, however, be admitted that their extensive use has been prevented by the want of complete combined installation. Ontario is far behind in any system of grouping and using these remedies. I quote some of the opinions given before me by those who know conditions here.

Dr. Edmund E. King, President of the College of Physicians and Surgeons, referring to the education of students on this subject, said to me:

"As far as we are able to find out, they are given just clinics; they are not trained in these matters; there is no professor or associate professor designated to teach so many hours in the session, and, therefore, we would respectfully ask that the Commissioner should order, or that it should be advised, that these courses be taken up. I asked Dr. Hart—who took this matter up in 1909 and 1910 with the Council—if he would come here to-day and present these views, should you desire to hear them, and he is now present. He had urged this matter upon the different universities, but they had found difficulty in securing suitably trained men to teach these different subjects."

Dr. J. S. Hart says:

"The growing importance of this department of therapeutics has been forcing itself more and more upon the university representatives and upon the universities themselves, so that I should imagine that with the advance of these sciences themselves and the pressure of public opinion, combined with the pressure of some who regard the matter as important, these departments of therapeutics will soon occupy the place they deserve."

Surgeon-Colonel I. H. Cameron:

Q.—Has it got far enough to suggest to the authorities the necessity of making it part of the regular medical course?

A.—I think they are impressed with the idea, but there is no chance of carrying it out now, because there are no medical students in England.

Q.—These things can only be suggested while the war is going on?

A.—Quite so.

Q.—And everything is subordinated to that?

A.—Yes, exactly. I think that will be one of the outcomes of the war. The Manchester Royal Infirmary, the Glasgow Western Infirmary, and the Glasgow Children's Hospital are three of the newer and more fully developed hospitals of late years, and they have made complete installations.

Q.—Of mechanical appliances?

A.—Of mechanical appliances, electrical appliances and balneological appliances. They are all grouped together.

Q.—From your observation, would you say that they are being used more in England now than they used to be?

A.—Yes, decidedly.

Q.—Apart from military interests?

A.—Yes. England has always been behind America in that respect. America has been much more enterprising in these new lines.

Dr. William Goldie, Associate Professor of Clinical Medicine, University of Toronto, after stating that surgery was very thoroughly taught, said:

Q.—You cannot say the same of physical therapy?

A.—One could not say that, because this has been a matter of rapid development within the last fifteen years.

Q.—You do not think your teaching in the Toronto General Hospital is all that you desire?

A.—Not all that one could desire. From the standpoint of thorough teaching, it is not; but the development has been slow, and it is pretty difficult to know what one should teach in the course. Many new methods have been brought forward, so that electro, hydro and physical therapy have to be tried out pretty thoroughly in order to know whether they are of any real benefit. More definite

information is being obtained and the underlying principles of it ascertained. Those can now be taught.

Q.—Has it got so far that you are at all impressed with the necessity of increasing or enlarging the equipment, or rather emphasizing the course to students?

A.—Oh, yes.

Q.—Has that been due wholly to the war?

A.—No, it is not due to the war; that has been a necessity arising out of the development of the different appliances, the perfecting of the different appliances, and an understanding of the principles.

The fact is that this branch of therapeutics is not an obligatory one (pp. 2671, 2686, 2781), nor is there any examination in it (p. 1674). Hence it only develops in the mind of a student who is attracted to it. This is the case also in McGill University (p. 3137).

There is one additional element, important to our Province, though secondary to the main purpose of my recommendation, and that is the total revision of our attitude towards the use of mineral waters in Ontario. They exist in four or five localities, each with its special quality, but are only offered to the public accompanied by the most primitive and distinctly invalid surroundings, with an almost total absence of medical supervision.

I may quote what an eminent hydrologist has said on this subject:

"The serious study of medical hydrology in recent years has shed new light upon the true value of waters. And not only has the hydrologist to consider what are the particular properties and actions of the waters and baths, but what is the influence of the place as a whole, including, above all, the influence of the climate upon the sensitive organization of invalids. In the best type of health resorts the specific action of the waters and baths is promoted and reinforced by the general action of the place.

"The health resorts of a country are a national asset. Their utilization and development may be a matter of national concern. It was so under the Roman Empire, when baths were more widely and scientifically employed than at any period in history. It is so now in France, Italy, Germany and other Continental countries. In those countries the governments have for many years made themselves responsible in one way or another for the national spas. Medicinal waters, like other mineral resources, are considered of sufficient importance to warrant their conservation by law, and their development is assisted by government oversight and legal provision. They are thereby protected against the risks that otherwise attach to private ownership, both in the way of neglect on the one hand and unwise exploitation on the other." . . .

"No one who has followed the growth of medical hydrology in this and other countries during the last few years can fail to realize that it has taken a place among the medical sciences, and that at the present day the art or practice of hydrology affects the welfare of many thousands of persons." . . .

"What better means could be taken to these ends than to set up systematic instruction in hydrology?" . . .

"At such an institute, under right auspices, not only could teaching be given, but a clinic established, and, most vital of all, investigation and research carried on, that English physicians should no longer subsist on knowledge borrowed from

other countries, but that we should substantiate our practice upon our own soil. Only so in any country can any art permanently flourish."

I may add that in the evidence taken before the Parliamentary Committee on the Care of Returned Soldiers there is suggested in a vague way the utilizing of the mineral spring resources of Canada. I hope that something may be done, and at once, to give an impetus to the development of a much needed adjunct to our methods of care.

I have no doubt of the immediate and crying need of not only one but many institutes such as I have indicated. Something is being done in the present Military Orthopædic Hospitals. These cannot be too highly commended or too widely used. But I doubt if in Ontario some special effort should not be made, in view of the fact that she has sent by far the largest number of soldiers to the war, and may expect an extra burden. Besides, there is no need to draw too strict a line between military and civilian necessities. Without in any way trenching upon the duties and responsibilities which the Dominion Government should properly bear, aid might well be given for the establishment of one such institute in which combined physical therapy might be both taught and used, and which might of its kind be a model and a type for others. In the supporting statement I have given the cost of some of the equipment, which indicates that such an establishment need not be an expensive one to build and equip. The Zander room, which is so highly praised, is costly. As to it, Dr. Fox says:

"His (Dr. Zander's) machines are expensive and require much space, however, and an engine to supply motive power. Substitutes for them can be devised and constructed to produce the same effects at one-tenth the cost, especially if the weight and pulley be employed."

And this view I find is confirmed by my own investigation and enquiries. The Toronto General Hospital will not be complete, even for civilian and provincial needs, without an addition to its valuable equipment; and without such an addition physical therapy in the modern understanding of the term cannot be properly taught to medical students and medical men.

For this reason chiefly I urge the matter. And second in importance is the equipment of a department in the physical building, such as Professor McLennan outlines, with a complete outfit for the purposes of research, experiment and the teaching of both students and post-graduates. To this latter class, including many older practitioners who have not had an opportunity of adding to their experience the modern physical methods, this will be an unqualified boon.

I hope to see a proper and obligatory course established at once in Ontario in physical therapy, accompanied by a proper institute for combined therapeutic agents, and an adequate physical laboratory for testing, understanding and improving these modern aids to the restoration of health, without which the course will be largely illusory.

(See Supporting Statement "A," p. 74.)

OSTEOPATHY.

(See Supporting Statement "B," p. 91.)

I have carefully examined the list of members of the Ontario Osteopathic Association, the Toronto Osteopathic Association and the Toronto Association of Osteopathic Physicians. The membership of the latter is all, save one, included in the list furnished me of the members of the Ontario Osteopathic Association, to which I refer again. From the information given by these associations, I have ascertained the following facts:

Out of the 86 members of the Ontario Osteopathic Association as to whom the requisite information has been given, 46 graduated from the American School of Osteopathy, at Kirksville, Mo. Up to 1916 this had only a three-year course of nine months each for the degree of Doctor of Osteopathy—now increased to four years, which previously had been optional. Of the remaining 40, 12 are from the Still College, Des Moines, Iowa, with a three-year course, and 7 from the College of Physicians and Surgeons, of Los Angeles, Cal., which has since February, 1915, a course of four years of eight months. No four-year student from these schools can have graduated since the four-year course was established. From the other colleges recognized in the United States by the American Osteopathic Association there are 5 graduates. The remainder come from other colleges not recognized by that Association, or by those who have appeared before me, as being worthy of attention.

Of the 19 members of the Toronto Osteopathic Association, only one is a graduate of an osteopathic college so recognized, the remainder having taken a course either in Toronto or in the United States in some smaller and in some cases extinct institution prefessing to teach osteopathy, chiropractic or mechano or suggestive-therapy.

Some light is thrown on the screen by the following advertisement in the Bell Telephone Company directory for 1916—those mentioned being included in the Ontario Osteopathic Association:

"In the absence of legislation regulating the practice of osteopathy, and the consequent invasion of Ontario by hosts of unqualified persons calling themselves osteopaths, the TORONTO ASSOCIATION OF OSTEOPATHIC PHYSICIANS publishes this list of QUALIFIED OSTEOPATHS who are now (August 1st, 1916) practising in the city. All are graduates of colleges now requiring for graduation a minimum course of three years, each of nine months actual attendance and work." (Then follow the names of twenty practising osteopaths.)

Osteopathy is not united in Ontario, and the associations founded by its members are small and chiefly defensive; i.e., to protect the members from prosecution under the Ontario Medical Act.

Those osteopaths practising here in 1913, in which year, in June, Sir James Whitney announced his intention to appoint a Commission to enquire into Medical Education, may be given as follows:

In the Ontario Osteopathic Association there are 59 who had begun practice in Ontario before June, 1913.

In the Toronto Osteopathic Association, 16 out of the 19 were here in 1913. No other bodies have appeared before me, nor any individual osteopath, so that these two associations, including as they do the Association of Osteopathic Phy-

sicians, represent the militant force of osteopaths asking for the right to practice without passing the present license test, and of their members 75 only can claim that they are within the protection of the present law as it had been interpreted by the Courts up to 1913. Of this number 14 are not citizens of Canada, but retain their American nationality, and 24 are not graduates of any school recognized by the American Osteopathic Association.

I am not in a position to state exactly the number of osteopaths practising in Ontario, though I have asked for the information. It was represented to me on one occasion as being about 100, which is about the number represented by the three associations, and at another time as being approximately 130. There are some 4,800 registered practitioners on the books of the College of Physicians and Surgeons of Ontario. The only detailed information supplied as to practising osteopaths in this Province shows a total of 94 only. Of the Drugless Physicians Association of Canada, many of whom practise osteopathy, I have been given information, in answer to my request, as to a majority of its members, up to the number of 45, of whom 6 are citizens of the United States. None of them have taken a course in osteopathy in any of the colleges recognized by the American Osteopathic Association. The only colleges claiming more than one graduate are the Canadian Chiropractic College or the College of Mano-therapy of Hamilton, Ontario, which has five; the American College of Mano-therapy, in Chicago, which has seven (one for four months and another six weeks post-graduate), the National School of Chiropractic, Chicago, which has ten (two of two weeks post-graduate, and one of six weeks); the Ross College of Chiropractic, Fort Wayne, Texas, which has three; the Robbins Chiropractic College, of Sault Ste. Marie, Ontario (now defunct), which has six; the Palmer-Gregory Chiropractic College, of Oklahoma, which has four, all four weeks courses; the International College of Osteopathy, Elgin, Illinois, which has four (one for five months); the Detroit Chiropractic Institute, which has six; the International College of Chiropractic, Detroit, which has six, and the American University, Chicago, which has two.

All these institutions have courses not exceeding two years, and often one year, or less, and none of them have any standing worthy of the name, so far as I can learn.

Taking up those that were in practice in Ontario in June, 1913, it appears that twenty-three of this association antedate that period, i.e., about one-half of the membership, the remaining having graduated or begun practice afterwards.

On the material side, so far as these associations have incomes or investments, they are very small and quite inconsiderable. The reason given is, that lacking legislative recognition they cannot grow. I refer to this fact because it indicates, notwithstanding the reason given, a lack of enthusiasm over the subject and of faith in its success. This is no doubt largely due to the fact that the members, educated abroad, and coming into Ontario, have nothing to attach themselves to except voluntary societies, the motive power of which was absent until the present Commission was appointed.

The practice of osteopathy has obtained a very considerable vogue in the United States, its home. In that country it has received recognition as a method of treatment and as part of medical practice in no less than forty-four states; and it is therefore to that country we must look to ascertain its definition and its work.

Its adherents have founded colleges where osteopathy is taught, together with almost all the subjects required in the most modern medical school. Its schools

and practitioners have formed the American Osteopathic Association, which has established a Research Institute in Chicago, Illinois, and publishes a journal devoted to osteopathic interests.

In the United States there are independent osteopathic boards for examining and licensing osteopaths in twenty states. In nine states there is a composite board, and in fourteen states an arrangement is made to call in an osteopath to assist in the examination, or to omit materia medica and therapeutics or major surgery, or to examine osteopaths as such. In three states osteopaths are exempted under the Medical Act, and in the District of Columbia there is no provision on the subject.

In the larger and more exacting states—such as Illinois, Iowa, Massachusetts, New Jersey, New York, Ohio and Wisconsin—the tendency is to keep in the hands of the state licensing body the examination of those who do not desire to practise modern medicine as it is generally understood, either by means of a composite board, or by some other like arrangement, or by omitting specified subjects altogether.

Maine and New Hampshire exempt drugless healing from the operation of their Medical Act.

The honours are about evenly divided between those states who have an independent osteopathic board and those who retain some control in the State Medical Board.

I have in the Supporting Statement (B) devoted a considerable space to the situation of osteopathy in the United States, which is interesting and critical. It may be shortly summarized thus:

Four factors have recently emerged: (1) the effort on the part of the osteopathic colleges to obtain recognition for their courses as equal to those in ordinary medical colleges, by raising their standards; (2) the lengthening of their courses, the stress laid on microscopic and bacteriological research, and the inclusion of pharmacy and materia medica in some cases; (3) the realization by the osteopathic profession that this new departure endangers their identity and requires great effort to secure for the colleges students of intensive osteopathy; (4) a division in the ranks of osteopathy as to whether it is worth while to perpetuate the difference between it and medical science, in view of the similarity of studies and the length of course now required.

These things indicate with some clearness that the osteopathic situation is in a state of transition. The colleges, having taken these steps for better or for worse, need larger bodies of students to meet the increased expense of enlarged courses and longer terms. If they secure them from osteopathic sources alone, the output will be better educated and more widely instructed in medical science, apart from osteopathy, which will lose its exclusive character. If, on the other hand, the student body is recruited from those who are not markedly osteopathic, it will be because the scope of the education will be wide enough to enable them to compete on equal terms with those from the ordinary medical colleges. In either event, the standard will change and on the effects of that change will depend the future of osteopathy as a separate science or practice. The colleges have embarked on a course which will require great efforts to enable them to stand the competition of the larger and wealthier medical colleges, and it is evident from the expressions of those who realize the situation, that the outcome is doubtful both as to the ability of the institutions to stand the strain and as to the quality of the educational

result. If osteopathy can continue to maintain itself as a separate and exclusive cult, it will have demonstrated that it has in it the intrinsic merit which is claimed for it, although much enlightened and broadened since the time of Dr. Still. If, however, it finds that a more liberal education leaves it merely as one of the therapeutic methods used in the practice of medicine, it will naturally fall into line with other agencies heretofore employed in the healing of the sick. In either event it will be the part of wisdom on behalf of the authorities of this Province to decline any action that will precipitate here a state of affairs now probably passing away in the United States.

In order to ascertain whether this is merely a "present flurry" or a serious and fundamental crisis in the history of pure osteopathy, I quote from a few of the most modern authorities among the osteopathic profession itself.

The Report of the Trustees of the American Osteopathic Association, made to the Osteopathic Convention at Kansas City in July and August, 1916, sets forth the position of the profession thus:

"It is safe to say that a majority of those now practising osteopathy were graduated when the course of study covered two years. Some of these, conscious of the success they have met with, do not realize or do not admit that the scope of practice needs to be materially different from that which they have successfully maintained.

"On the other hand, most of the graduates of the past seven or eight years, and especially those who have received the four-year course, feel that they are qualified both as to diagnosis and treatment of all acute conditions, including minor surgical and emergency cases, and being thus qualified they feel that it is their right and they desire to enter the field of general practice and demand that no restrictions be placed in their way.

"The schools maintain that from their standpoint our education should be placed on either a two, or at most, a three-year basis, and osteopathy should be taught and practised largely as a specialty, its field being adjustment of body structures, plus attention to diet, hygiene and general measures common to all schools of practice; or the four-year course, with entrance equal to that demanded for the other professions, be instituted and the practitioners be given the rights and privileges consonant with their pre-medical education and technical training. The colleges maintain that they should not be expected to meet all requirements exacted for graduates from the best medical colleges, and require them to give a diploma which, due to the legal restrictions in many states, means very much less in the field of practice than that given by an even inferior medical college.

"There are still others in the profession who believe that the educational standards now set and in force should be maintained, and that the teaching should in no sense contemplate the use of drugs in any form, nor should the profession favour or countenance legislation which grants this privilege to the osteopathic profession. Those holding these views maintain that the field for osteopathy is such that students sufficient to meet the growth of the profession will be forthcoming to the colleges when they give a strictly osteopathic training.

"In the belief of your Board, it is in no sense necessary that the profession be unanimous in its opinion as to what the scope of the practice shall be, but it is, however, necessary that the profession be unanimous in its convictions as to the principle of osteopathy. Loyalty to principle and liberality in detail must be our motto as we pass through this evolutionary and developmental period.

"Your Board has full confidence that when the present flurry passes over and the profession settles down to the stern duty of maintaining and increasing its growth, that differences will adjust themselves, and harmony and co-operation will prevail."

At the same Convention the Educational Department Committee reported (in part) as follows:

"A fundamental fault of some of the college instruction is that it lacks osteopathic colouring or saturation. At times, with some of the teaching at least, no apparent continuous attempt is made to inculcate the basic principles of osteopathy. No doubt many facts are taught, but too frequently they lack osteopathic interpretation, analysis and synthesis. It is the interpretation of a fact that renders it vital and practical; when this is lacking the ultimate effect upon the student brain may be deplorable. A curriculum that is osteopathically correlated and unified can be the only solution. The future of our profession depends upon this, and this alone.

"Everyone is aware that we are vitally in need of osteopathic literature; a literature that will crystallize our present knowledge of osteopathic science and application, and which of course will leave plenty of room for future development. The first requirement is that of the school, for, indeed, this is the foundation of our profession. It is basically wrong that our students must largely depend upon medical texts. No doubt, many of the teachers are capable of giving the right interpretation to the facts therein contained, but is this interpretation always presented, sustained and insisted upon? The personality, the ideas and the discipline comprise a teacher's qualification for doing good work and inspiring a student to make the most out of his life work. But even if all of this is satisfactory, it is evident that most of the osteopathic concept and discipline is simply a mouth to mouth instruction. Clearly, we cannot progress as we should, and permanently, unless we have definite published statements, records, suggestions, etc., of our scientific development."

After that Annual Convention, the official journal of the American Osteopathic Association thus expressed itself in September and November, 1916:

In September, 1916, it said:

"We, the practitioners, claim the profession as ours, and yet what have we done to lighten the burdens of the colleges without which our profession would soon cease to exist and our prestige would greatly wane within the time of our own active practice? For the most part we have proposed or submitted to the enactment of laws in our states without much regard to whether the colleges could meet the conditions imposed or not, thinking that it was the easiest way out for ourselves, or that it gave us prestige and established our practice.

"The condition has come about that either we must occupy the same plane as our imitators by reason of two or three years of college instruction, or we must meet the educational standards set by the highest states for governing the practice of the drug systems. Up to this time we have undertaken to do these things ourselves—to have the colleges change from one standard to another without perhaps advising with them as to whether from an economical standpoint it could be done. We have not undertaken this, however, in any case until one or more of the schools had taken the action, but perhaps we have, in some slight degree, undertaken to hurry the hindmost in taking the step.

"At least we have now gone too far to retrace our steps, if we could. The legislation we have secured or submitted to requires of our colleges the steps they

took at this meeting. This legislative status could not be undone, and we go back on a two-year basis without a fatal shock to osteopathic advancement. So far as we know no one considers such a step. Then the only alternative is a hearty support of the present programme. In the resolution now advanced by the colleges, or four of them represented at this meeting, they assume the responsibility for this move, ask the board to give them a fair chance by making it uniform, and ask the support of the profession in sending them qualified men and women with which to make it a success."

In November, 1916, it said:

"We know the osteopathic profession is not alive to its opportunities, and we fear it is not cognizant of its dangers. A revolution is going to come about in therapeutics within the next few years. Changes indicating this are already taking place. Because we have failed to give the public an adequate conception of the practice of osteopathy and of the scope of its application, are we going to allow our imitators on the one hand and on the other the medical practice, forced by a public demand to give up drug medication, to appropriate and practise the tenets and principles of osteopathy, simply because we have failed to educate the public that these principles and tenets are ours? This is the most serious condition confronting the osteopathic profession. This recognition can be brought about by the rapid increase in numbers of these rank imitators of osteopathy, they having no restrictions to their entering practice, and by freely advertising they can reach those whom we, through indifference, fail to reach. And the medical profession is already turning and shifting to natural, physiological remedies, because it is being proven that drugs instead of aiding are a block to physiological processes within the body."

In his presidential address before the Ohio Osteopathic Society annual meeting, October 20th, 1916, W. A. Gravett, D.O., said:

"Beginning with the early graduates—and in so doing it must of necessity follow, graduates of the parent school—they were sent out as embassies to the different states, presenting a new therapeutical doctrine—they had received their instruction and inspiration from the propounder—he himself believed then, and he believes now (as is evidenced by his original writings in later years) that the osteopathic, etiological concept of disease is all-sufficient, that it is fundamentally comprehensive, and that the application of this philosophy should be the basis upon which we should reason ourselves out in any therapeutical emergency. This concept was accepted as an axiomatic truth almost universally by these graduates. Seriously and with confidence they endeavoured to practise the healing art in all its recognized branches, except surgery, from this viewpoint. They met with success, and were proving the efficiency of this doctrine to the satisfaction of the laity, and could they have continued along these original lines perhaps the science would be farther advanced than it is to-day.

"But these practitioners were shortly made to know that there are certain therapeutical procedures and methods relating to the public health which have by common consent come to be considered a necessary part of any system of healing. Dr. Still, himself a practising physician for years, realized the necessity of preparation along these lines, but he consistently maintained that the osteopathic viewpoint, relative to the public, was different from that generally maintained, and these graduates were prepared to meet these conditions in this way, but unfortunately their viewpoint was not accepted, and while these men demurred they eventually had to submit.

"The situation varied in the different states, each sooner or later solving the problem for the best interests of all concerned, as they honestly believed. Other states were not so fortunate as Ohio in limiting the requirements which were forced upon them, and the science has been more or less compromised thereby in that our schools must prepare all students to meet the most extensive and exacting of these requirements. Thus it became necessary for them to diverge from their strictly osteopathic course, and this deviation once started gained momentum under its own impulse and later factors exercised an untoward influence, and the schools now find themselves following a vacillating course like a ship at sea without chart or compass."

I now give extracts from statements of those who are in a position to speak with authority owing to their connection with the American Osteopathic Association.

Dr. Chiles, its secretary, in his statement before me, practically admits the divergent views at present prevailing in osteopathic circles:

"I have no doubt this matter has previously been brought out before the Medical Commission, but may I be permitted to say, Mr. Commissioner, that there is, I would not say a division in the profession, but there are in a way two wings: there are those who are perfectly willing to depend to the last ditch on what we call genuine osteopathy, or what has been named 'ten-fingered' osteopathy—that is, what you can do with your hands and with your commonsense. These would prefer to call in a medical man, if necessary, in an emergency, rather than undertake to do any medical administration or any surgical work themselves. There are others—those that you spoke of in Ohio—who are criticizing the present law, who feel that when they have put in four years they ought to be considered qualified and that the law ought to give them the privilege of doing anything which their judgment dictates should be done in a given case. Where you find any division at all, the line of cleavage is between the two right there. I think a large majority of the profession feels that we had best for the present limit our practice to what might be called strict osteopathic interpretation. The others feel that it is their duty to the community to go the limit, do anything that their judgment indicates ought to be done, and that, I believe, constitutes the dividing line all through."

That this division must be traced to the action of the State Medical Boards, in raising the standard of requirements, is also, I think, clear.

Speaking of the Committee on Education, Dr. Chiles says:

"This Committee on Education, made up of several members of the profession not connected with colleges and also representatives of the colleges, works with the colleges from several angles. The first, of course, is: What constitutes, from the practitioner's standpoint, as well as from the collegeman's standpoint, the necessary qualifications for the practice of osteopathy; what subjects necessarily enter into the question of equipping a man or woman for his or her best work as an osteopathic physician? Secondly, what the states require. It is not fair to a man to take him into a college and graduate him if we cannot give him a field for practice. Therefore, the requirements of several states have to be taken into consideration, and that, I am perfectly frank to confess, has considerable influence on our standards of education—that is, as to what subjects go in, and sometimes we put into the curriculum what we consider is not germane to osteopathic education, but the state says he must have it." . . .

"Here we are confronted by a situation different from the conditions met with elsewhere, in that we have some forty odd states, practically all of which have now enacted Medical Practice Acts regulating the practice of osteopathy either as a

separate Act or providing for it as part of the Act governing the drug practice. If, for instance, a state like New York sets up requirements that the colleges think they are not justified in meeting, it is up to the college to say whether it will simply do business without fitting men and women to go into that state, or whether it will meet the requirements of that particular state. Some of the colleges meet the requirements in all of the states; some of the colleges do not, because they do not think they are called upon to do so, for the reason that these requirements are essentially technicalities. I think probably there is no use going into the details of that, but just on the side let me say this: New York, for instance, requires that every student who enters a college which New York State recognizes must have had a year in biology and in chemistry and in physics before entering the college—not only the students that come to New York, but everyone who enters the college. Some of the colleges feel that it is not worth their while—that half a dozen or so students that want to go to New York do not justify it."

He admits that state requirements tend to lead away from osteopathy. Speaking of New York, he says:

"I think that New York State has influenced it very materially. As far as the states are concerned, whether rightly or wrongly New York is looked upon more or less as maintaining the highest standards, and when New York State recognizes an osteopathic college, rightly or wrongly that college feels proud, and others want to get into the same class."

And later, he says:

"Any of us will naturally take a certain amount of pride in that, and yet we know that the tendency in that may be to lead us into the ranks of conventional medical education, rather than to insist upon our own characteristic and fundamental principles as heartily as we would prefer to do."

This tendency seems to be quite pronounced. As to California, Dr. Chiles says:

"California divides practice up into two general sections—unlimited license, practising anything you please when you obtain it, and a non-drug license. A great many osteopaths in California, especially among the older graduates, have qualified under the non-drug or limited license. A great many of the newer ones who have attended college four years, the same as the medical people do, do not feel justified in accepting this very-much-looked-down-on license, in consideration of the time that they have spent to secure it, so the college there has put in a course on pharmacology and materia medica, which is taught by an M.D. osteopath, who teaches it, as he maintains, and as the college maintains—and I have no doubt is the case—from the osteopathic standpoint, but it enables them to have that much knowledge that they are able to pass the examining boards, taking the examinations with the medical students."

Dr. Meacham, president of the American Osteopathic Association, gave his views in this way:

Q.—Your association, I suppose, has endeavoured to bring about a better standard and condition?

A.—Decidedly.

Q.—What has it accomplished in that way?

A.—I was going to say "wonders." You understand that any movement of this kind has to start from one man and then go to several and then to hundreds and thousands. In the beginning these schools were established primarily as money-making institutions, similar, you might say, to little business colleges where

they teach shorthand, or something like that—not as professional schools at all. That was the condition that prevailed some twenty or twenty-five years ago, but as men began to get hold of the idea that osteopathy was a profession, and that people should be trained for it as a profession, there was immediately a push against the professional idea in the ranks, and the money-making idea in the men who had invested in property and equipment for school work. Through these organized efforts we have forced these schools to adopt a standard of education that is equal to that demanded by the American Medical Association, which has state university endowments, as well as private endowments behind it all the way through. We have forced them absolutely up to that standard.

Q.—To that same standard?

A.—Yes.

Q.—So that your standard is the same as that of the American Medical Association?

A.—Yes. I may say that one can take a catalogue of any recognized osteopathic college, and strike out the words "Principles, theory and practice of osteopathy," and insert the word "Medicine," and you have got practically a medical curriculum. You quite understand what I mean?

Q.—Yes.

A.—If you compare the number of hours of study, the number of lectures, the number of laboratory hours, the number and character of studies as given in the medical schools with those given in the osteopathic colleges, you could not tell the difference.

I may add here that in the supporting statement "B" there will be found ample and detailed corroboration of Dr. Meacham's statement.

Dr. Copeland, Dean of the New York Homeopathic Medical College and Flower Hospital, New York, in his statement said:

"So far as osteopaths are concerned, my impression of them is that their schools so nearly approximate to medical schools, and the same examination is necessary to acquire the medical licensing certificate, that they are all anxious to come in now. In the administration of our college, I find dozens of osteopaths applying for admission; they are keen to come in and take that additional year in order that they may become doctors of medicine."

Dr. Elfrink, Secretary, Illinois State Osteopathic Association, said (p. 1,638) that the osteopaths were anxious for classification on practically the same standard as that of the regular physicians.

Dr. Mills, Assistant Dean of the Chicago College of Osteopathy, says that he expects the training that his students receive to be as broad as that possessed by any physician.

Dr. Hulett, a member of the Osteopathic Board of Ohio, thinks they should have the right to perform major surgical operations and to use antiseptics and anæsthetics. He also says that the course of study in the osteopathic colleges compares very favourably with that of the regular medical colleges.

In Pennsylvania, according to Dr. Snyder, President of the Board of Osteopathic Examiners, pharmacology is taught. He says:

"While we learn the toxicology of drug therapy, we do not study drug therapy with a view to therapeutic action. We do not employ drugs for therapeutic effects. We employ drugs as antidotes, for sanitary purposes, as disinfectants and germicides, but we would hardly use a drug as a stimulant, neither would we employ drugs to any extent as purgatives or sedatives."

And Dr. Flack, Dean of the Philadelphia College of Osteopathy, adds, later on, that the reason drugs are taught in California is because there is a state law that must be met.

Dr. Elfrink, Secretary, State of Illinois Osteopathic Association, says that the teaching as to the value and use of drugs is essentially the same as that of the medical student (p. 1,641).

The situation in the United States, in the light of these and the other facts more particularly detailed in the supporting statement "B," appears to me to be this:

In 1897 the course for an osteopath was, as a rule, two years of ten months. Ten years later it was changed to three years of nine months each, while latterly, except in the case of the colleges at Des Moines and Kansas City, the four year course has been adopted.

Then, when confronted with the state requirements, the solution made by those in authority appears to be somewhat of this kind: That distinction should be, if possible, drawn between what are known as fundamentals, both in preliminary and medical education and training, and the therapy of the system—that is, the methods of cure that are used. Upon the fundamental branches they are willing to submit to such regulations and standards as may seem proper with regard to all medical education. So far, this would seem to meet with the approval of everyone, no matter of what medical persuasion he may be. The difficulty will be in agreeing upon what are the fundamentals; but putting that aside for the moment, the only difference set up by the osteopaths is in applying their therapeutic remedies, and these should, they think, be under the charge of a committee or board constituted by themselves.

They quote Dr. Andrew S. Draper, Commissioner of Education for the State of New York, to this effect:

"It seems to me the State must eventually come to the point of exacting different measures of education and experience from those who practise the healing art in different ways or use means of differing instrumentality. For example, the training required by those who administer drugs is bound to be more extensive than that required by those who do not, and the training required of surgeons is bound to go further than that of those who do not resort to the instruments of incision." And they quote him as recommending "That the Board of Regents advise the practice of legislative discrimination between the requirements of the scientific training of those who only manipulate the body, those who only prescribe medicines, those who perform small external operations and those who perform major operations in surgery."

That quotation, I think, supports the distinction which I have mentioned.

The difficulty I have mentioned crops up, however, as soon as one comes to fix the dividing line.

A method of curing should not dominate the diagnosis. Yet this is what it really comes to. Dr. Snyder, the Chairman of the State Board of Osteopathic Examiners in Pennsylvania, in answer to my question (p. 2,033) says:

Q.—Would this express the idea that I think I have gathered from you: that there is this difference—that having your theory as to what causes certain diseases, you teach anatomy having in view the peculiar way in which you are going about curing them?

A.—That is constantly before us, yes.

Contrast this with the view of Dr. Baldy, President of the Bureau of Medical Education and Licensure in the same State of Pennsylvania, whose duty it is to see that proper examinations are held (p. 2,023):

"Anatomy is an exact science; you cannot get away from it, and therefore being an exact science why should there be any osteopathic anatomy and why should there be a different medical anatomy?"

The confusion thus produced between these two departments, theory and practice, exhibits the difficulty of making any fine philosophic distinction between medical viewpoints. And this confusion is productive of grave results, because in Pennsylvania the osteopath gets the same unlimited license as a medical practitioner, and can use drugs and perform surgical operations, issue birth and death certificates and treat all manner of diseases.

I may perhaps quote Dr. Mills (p. 1,701), Assistant Dean of the Chicago College of Osteopathy, which has been recognized by the New York State authorities. He says that certain members of the profession are pleading for the right to know both osteopathy and materia medica, and adds:

"Osteopathy is comparatively young, but it has grown independently; but if osteopathy were included now in the medical course it would be rather lost sight of. It is so much easier to prescribe medicine that it would not develop any further. It has developed independently, but when this question is thoroughly developed, I imagine the outcome will be some combination, and that medical education will be extended that way."

It is in this direction that the authorities of the State of Illinois would like to move. (See statement of Dr. Drake, Secretary of the State Board of Health, Chicago, Ill., pp. 1,679-1,680.)

There are no osteopathic schools in Canada. Every graduate in osteopathy who comes here to practise has learned his art and science in the United States, where it is now in a state of transition. There are no schools which our provincial authorities can inspect and classify, so that perforce, if osteopathic physicians are admitted to practise here, we must depend for the standards of training upon the vigilance of some one or more State Boards in the United States.

That being so, why should we require less than they do, and why should we allow anyone to practise osteopathy in Ontario who would be debarred in the State of New York? Our standards of medical education are admitted to be as high as those who stand first in the official register of that State. It would, therefore, be a backward step if Ontario were to fail to recognize both the upward tendency of osteopathic teaching and the tacit recognition of high standards of medical education evidenced by its acceptance of registration in the most stringent State of the American Union.

Another pertinent enquiry may be thus stated: Why should there be created here a condition which the parent bodies themselves are endeavouring after long years to eliminate, and that just at a time when the movement towards an understanding seems about to be successful? And that success will mean much to both parties.

Manipulative treatment is becoming more and more recognized as a valuable agent in the cure or alleviation of diseased conditions of the bones and joints. The osteopath applies it to all conditions, the regular physician not enough in suitable cases.

The result, in my judgment, of declining to permit separate educational requirements here will prevent, in this Province, the establishment of a state

of affairs which would prove a stumbling block in our way, if in the United States a solution of the problem is satisfactorily reached.

If osteopathy is taken seriously by its adherents, as is now evidenced by the efforts made to reach higher standards, it will sooner or later result in one of two things—either that the osteopathic colleges will become to all intents and purposes regular medical schools, including both manipulation and drugs, or there will be established in the medical faculties chairs of what may be called manual therapy. But to separate the osteopaths at present is to postpone, as has been the result of the special legislation in the various States, the realization of union and to embarrass the efforts of those who are striving to raise and maintain the high standards now required in medical education.

The bald fact cannot be denied, that where a State in the American Union has put the osteopathic student upon the same or practically the same footing as the ordinary medical student, the osteopathic colleges and the profession have accepted the situation and met the requirement. I do not see why Ontario should be less decided or her requirements less worthy to be followed.

Only three of the Provinces of Canada have provided for the admission of osteopaths to practise, viz.: Alberta, Saskatchewan and British Columbia.

In Alberta, since 1906, a candidate for examination for license as an osteopath must have the same preliminary education as an ordinary medical student and a graduation diploma from a recognized school of osteopathy. This latter introduces the American osteopathic school requirements.

In the examination for license, candidates have to pass the regular medical examinations, except in surgery and medicine, the examination in surgery being confined to surgical diagnosis and the conduct of minor operations, and for medicine is substituted the theory and practice of osteopathy.

Those practising osteopathy for four months prior to May 9th, 1906, may obtain licenses if they are graduates or licentiates of a school, college or association recognized by the American Osteopathic Association.

Out of 999 physicians on the 1916 register only 11 are osteopaths, out of which 10 were registered under the Act and 1 by examination since 1906.

British Columbia has no medical school and no faculty of medicine in its university, but the Council of the College of Physicians and Surgeons examines candidates for registration. They set no standard of preliminary education, but since 1909 admit osteopathic candidates upon the production of a diploma from an osteopathic college recognized by the American Osteopathic Association. These candidates substitute for the practice of medicine and the theory and practice of surgery an examination in minor surgery, neurology and the principles and practice of osteopathy.

There are three osteopaths admitted to practice in British Columbia since 1909 by examination under the Act, and none have been admitted without examination.

In Saskatchewan, since 1913, there is a Provincial Board to examine candidates for license to practise osteopathy. Those practising prior to the 1st of February, 1914, may be licensed without examination if possessed of a diploma issued by a school of osteopathy satisfactory to the Board. There are 15 osteopaths registered in that Province, 7 admitted under the Act, 3 by examination and 5 have left, one being at the front.

There appears to be no preliminary education required as a passport to the examination.

The experiments tried in the Western Provinces, while not resulting in the production of a large number of osteopathic practitioners, are not conclusive either way. The number of osteopaths actually in practice, compared with that of the regular practitioners, makes it evident that no serious dislocation in the system of education has yet arisen, and that no real difficulties, the solution of which would be of use in dealing with the question here, have yet occurred. This is due to the absence of recognition of the absolute necessity for high and exacting standards.

None of those provinces have the traditions or the achievements which characterize the Province of Ontario, nor do they possess the high standards both in education and the expensive equipment which are present here. Neither do they compare in numbers even in the smallest degree with the regular practitioners who are registered here to the number of 4,816.

The complications which will necessarily arise here are more comparable to those which are confronting medical education in the United States; and I cannot but think that more light is to be gained by considering and weighing them than by following the lead of the Western Provinces of Canada.

The inadvisability of enacting any legislation now in the direction of allowing one class of a learned profession to practise it without the range of study required of others is emphasized when one reflects that a statute of that kind passed now would only provide Ontario with osteopaths of the older and less advanced school—in fact, those whose education was bounded by a two or three-year course, with equipment which the osteopaths now regard as insufficient, and without the benefits of research which they are so strongly advocating. Those of the future would be recruited from the long-term graduates of stronger osteopathic colleges; and, if so, why should the law be changed so as to allow osteopathic colleges existing outside of Ontario to draw away and educate our youth, when they would spend no more time nor meet more difficulties in the course if they remained here?

There is one very pertinent reason why in Ontario there should be no haste in admitting to practice those who are not able to fully comply with the essential requirements.

It is this—that owing to the war, there will be a shortage of men properly and adequately trained in medicine. Till this shortage is overcome, we ought not to permit the field to be occupied or filled by those whose education and experience has been acquired outside of Canada and on lines that, even now, are not fully settled and as to the correctness of whose fundamental conceptions there still exists grave difference, even among professed believers in their own system.

There are some practical objections which may be stated thus:

(1) The want of cohesion among those practising osteopathy in Ontario, and the consequent absence of any serious attempt to establish and maintain a high standard of attainment and practice.

(2) The small number of those adhering to osteopathy.

(3) The absence of real financial support to any of the organizations already on foot, and, what is perhaps the most serious—

(4) The practical impossibility of arranging for clinical instruction and practice under our present system of medical training and the dislike of those connected with the collection and analysis of vital statistics to any departure from the rule that the cause of death must be certified by a practitioner duly qualified under our laws and by one whose training would enable him to detect or suspect the use of poisonous drugs.

In regard to clinical instruction, there are practically now no osteopathic students in Ontario, because there is no real teaching institution here. But unless osteopaths are prepared to establish in Ontario a hospital for osteopathic patients, I am unable to see how their tenets can be taught by the bedside. This necessity is recognized by the Chicago College of Osteopathy, which has obtained the right to clinical instruction in the Cook County Hospital.

Assuming such a teaching body to exist, can a member of it go into any of our hospitals and instruct his pupils by the bedside? To do that assumes that he is the physician in charge of the case. Is this permitted in any of our hospitals, or will the attending physician allow an osteopath to instruct a class by the beside of his patient? If so, it must be in isolated cases and under unusual conditions, and that, in itself, defeats the object of clinical instruction, which is to establish contact with all kinds of diseases in various stages, such as a general hospital affords, and not merely familiarity with an occasional case.

Upon the best consideration I can give to this important subject, I can see no escape from the conclusion that treating osteopaths as a separate class in regard to their medical training would be, especially at this juncture, a very great mistake.

We have in Ontario no vested rights, no investment of any money, no large body committed to and pushing its propaganda, no graduate of an Ontario College of Osteopathy.

In the United States—from which all who practise osteopathy here come—there is a distinct and perceptible movement towards what may result in merger or affiliation, or, at least, in the standardization of medical training as between the regular medical and the osteopathic schools.

There remains to be considered the position of those who have been practising osteopathy since the decision of the *Ontario Medical Act* in 13 O. L. R. 501. This decision was pronounced on the 21st November, 1906—ten years ago.

In March, 1910, a conviction against an osteopath—R. B. Henderson—for practising medicine was quashed by his Honour Judge Morson. I have no doubt that if these cases were to come up again, in the light of the present position of osteopathy, its teaching and practice, the decisions in them would be entirely different.

I find, taking the members of the Ontario Association of Osteopathy, and analysing the list of 86 of whom the Association has furnished particulars, that up to the end of 1906 only 13 osteopaths were practising in Ontario, and that in the last 10 years an average of 7 per cent. has come into the ranks. Out of the total of 86, 62 practise in Ontario, outside of Toronto, from Ottawa to the Soo.

Of the list of 20 or 22 osteopaths who represent themselves as the only qualified ones practising in Toronto, 9 are American citizens, and out of 18 in the list who have furnished information, 3 are graduate of the College of Osteopathy, Los Angeles, Cal., 4 of the Still College of Osteopathy, Des Moines, Iowa, 8 of the American School of Osteopathy, Kirksville, Mo., 2 of the Northern Institute of Osteopathy, Minneapolis, Minn., and 1 of the Pacific College of Osteopathy, Los Angeles, Cal.

The number of osteopaths that have to be considered is therefore not large, because from the number coming in after 1906 must be deducted those who came here after the public promise of Sir James Whitney that the whole matter would be considered.

I find that practically two methods have been adopted to deal with like situations. One is, as in New York, to admit those practising on a certain date if, within six months, they can produce a diploma from a college which, at graduation, had a proper course of study in anatomy, physiology, pathology, hygiene, chemistry, obstetrics, diagnosis, and the theory and practice of osteopathy, and prescribed a proper length of course and study.

The Ohio system is to require an examination to be passed in those subjects before the State Medical Board, in the manner required by it. But even in Ohio there was no examination of credentials, for two reasons, thus stated by Dr. Matson: "First, because it was known that they did not have proper preliminary training; second, because it was felt that to require them to produce credentials it would have been necessary to recognize the teaching which they had received. In other words, under the provisions of the waiver, in order to establish a standard, those who had been engaged in practice for a definite period were certificated. Our original plan was to examine everyone who had practised for one year or more, but unfortunately another provision was made eliminating the examination requirement for those who had practised five years or more. This last provision was most unfortunate."

Notwithstanding the conclusions I have reached, I am not in favour of dealing harshly with those practising osteopathy here on June 30th, 1913. It is a matter of dealing fairly as between the public as a whole and the individual who has come here and, according to the decisions at that date, has broken no law in so doing. Consequently, and as a matter of equity more than of legal right—because no one can have a vested right in regard to public health or private healing—I would recommend that those practising in Ontario on the 30th day of June, 1913, be licensed to continue as osteopaths only, provided that within six months they produce a certificate, under the seal of the American Osteopathic Association, that the Association is satisfied, after due consideration of the case, that the person named in the certificate would be qualified to pass such an examination as is required in that one of the States of the American Union, which recognizes osteopathic practice, having the highest standard.

I am rather loathe to make the practice here of any physician dependent upon a certificate which is necessarily vague as to qualification and education. But the American Osteopathic Association has taken a stand in favour of high standards of education and has had to deal with many who were in practice and had received their education under the older conditions. Many of those practising here are elderly, and settled, and could hardly be expected to go to the United States for an examination. And there is no one in Ontario to examine, except among the class to be admitted. Consequently, if the American Osteopathic Association with which the Osteopathic Associations here are or can be affiliated, will certify any practitioner as qualified, in their judgment, to pass the test in such State, it ought to be a sufficient guarantee. It is probably the best that can be got, and if the admission of these older men be somewhat of an indulgence, it will not hurt the medical profession, and their numbers will prevent any great harm being done to the public.

The license thus granted shall not permit its holder to use or administer drugs, nor to perform surgery with the use of instruments, nor to sign death certificates, nor to use the term "Doctor" either in full or otherwise indicated, and must be limited to osteopathic methods and practice.

(See Supporting Statement "B," p. 91.)

CHIROPRACTIC AND MANOTHERAPY.

(See Supporting Statement "C," p. 124.)

Of the Canadian Chiropractors' Association the record of its 24 members have been sent to me. None of them have taken courses of more than two terms of six months each. All but 8 have graduated from the Palmer School of Chiropractic, Davenport, Iowa, in 1910, 1911, 1912, 1913 and 1914, and in so doing only took this short course. Of the remaining 8, 3 graduated from colleges now defunct, and one from the National Chiropractic College of Chicago, all of which have or had correspondence courses, and the association therefore declines to vouch for them. The other 4 graduated from the Canadian Chiropractic College in Hamilton, after a course of two terms of six months each.

The number of those in practice in Ontario in June, 1913, was fifteen.

The Ontario Chiropractors' Association has a membership of 25. Of these, 23 have graduated from the Universal School of Chiropractic, Davenport, Iowa, the remaining 2 having studied at the Oklahoma Chiropractic Institute and the Detroit Chiropractic School.

Of the 23, 9 took a course of only nine months (three of them spending some time previously at the Palmer Chiropractic College), while 14 took a course lasting 12 months (two attending the Palmer College previously). The remaining 2 took 8 and 12 months' courses respectively. Of the whole 25, those practising in Ontario before 1913 number 17.

The Dominion Chiropractors' Association has a membership of 18. Of these, 13 graduated from the Palmer School of Chiropractic, all but 4 taking a 2-year course, 2 taking 9 months, 2 a 3-years' course, and one unspecified. Two are graduates of the defunct Robbins Chiropractic College, of Sault Ste. Marie, 9 months' course, 1 of the New England School of Chiropractic, and 3 of the Canadian Chiropractic College, Hamilton, taking 1 year. Of the whole 18, only 8 were in practice in Ontario in June, 1913.

The education received by Chiropractors is of such short duration, and is so fundamentally different from that of any other school, that it is difficult to regard their desire for legislative recognition as seriously as that of the Osteopaths.

As compared with the osteopaths, there is a more marked weakness in numbers, in training, and an absolute want of real investment in educational facilities. The equipment of the only existing school is but $1,200, book value, while the income of the three associations, into which the chiropractors are split, is negligible, as will be seen in the Supporting Statement. There is nowhere apparent any desire to approximate either to the regular medical standards or even to those of the osteopaths. This school is quite irreconcilable, as appears from their statements and literature, and any attempt at fusion or co-operation would be quite futile.

Dr. DuVal, who conducts the Canadian Chiropractic College at Hamilton, said to me: "Chiropractic is a unique science. It has nothing in common with any other method, class, school or cult, neither in its science, philosophy, art, doctrine or principles on which it is based."

In accounting for his meagre equipment, he said that the essential apparatus necessary to teach chiropractic is brains, hands, knowledge and the ability to impart to the students.

Their repudiation of all modern scientific knowledge and methods is such that it would be impossible to recommend any way in which they could be allowed

to practise by which the public could be safeguarded. Their case was well presented, but was definitely Ishmaelitish. Those who appeared before me saw no necessity for preparatory qualifications, ridiculed and repudiated diagnosis, bacteriology and chemistry; admitted that a chiropractor acts in all cases upon his cardinal principle, without examination.

Dr. B. J. Palmer, the head of the most important chiropractic college in the United States, in giving evidence in the case of the State vs. Jansheski, in December, 1910, when asked whether, when a patient came to a chiropractor, he was asked the history of the case, answered: "No, because it be of no value;" and in answer to why that was so, said: "A person comes to us without telling us what the trouble is; it makes no difference whether a physician has already diagnosed it as insanity, appendicitis, indigestion, or anything they call it. The chiropractor needs to know nothing about that case from a physician's standpoint; it is immaterial, yet he can take that same case, put it down on his benches and analyze that spine just as accurately without knowing those things; in fact, sometimes I think better. . . . It is not essential the chiropractor should know what the patient said he had, but you can adjust the current for it running into the organ, and the patient is well. That is where chiropractics becomes purely a mechanical proposition, a mechanical and electrical-making circuit proposition in a man."

The definition is put into technical terms by McNamara, of the Universal Chiropractic College, Davenport, Iowa, in *Progress* (October, 1912) thus:

"The theory sustaining this system presumes that in consequence of displaced vertebra the inter-vertebral foramina (openings) are occluded (closed), through which the spinal nerves pass. . . . In this way the nerves are pinched, and chiropractors assume that such pinching is responsible for 95 per cent. of all diseases. Chiropractic concerns itself with an adjustment of the subluxations, thus removing the pressure on the nerves."

The announcements of their colleges in the United States frankly appeal to the expected financial returns.

The recommendation made by me as to physical therapy will in part answer a complaint made before me by Dr. Duval, who, after stating that bogus schools had produced fake chiropractors in large numbers, put part of the blame for this upon the authorities in Canada and the United States who did not, he said, owing to the instigation of the older professions, investigate and protect the science of chiropractic, to keep it fine and unadulterated and defend it against its intrinsic enemies, the grafters.

The admission indicates how dangerous it would be to sanction the practice in Ontario of those who adopt the chiropractic belief, unless it is possible to distinguish between fakirs and others. This seems impossible to do, if those who practise it are divided as to what is pure and what is adulterated.

I have pointed out in Supporting Statement "C" the position taken by those who are at present urging that this school of thought or unique science should be recognized, and what I think is the weakness of that position.

I cannot bring myself to the point of accepting, as part of our legalized medical provision for the sick, a system which denies the need of diagnosis, refers 95 per cent. of disease to one and the same cause, and turns its back resolutely upon all modern medical scientific methods as being founded on nothing and unworthy even to be discussed.

I may add that Dr. Matson, Secretary of the Ohio State Medical Board, Ohio, stated to me (p. 3,173) that the Palmer School of Chiropractic refused their

Board admission to inspect the school in any official way. This shows the difficulty where the licensing body has no local control over education. In Ohio they have no Chiropractic College, but regulate, examine and license chiropractors.

Manotherapy is a name for manipulation by hand, which has no distinctive feature, but makes use, so its upholder states, of the good in any and all other systems.

I have dealt with the only active exponent of this in the Supporting Statement.

(See Supporting Statement "C," p. 124.)

GENERAL.

(See Supporting Statement "D," p. 132.)

In a report on medical education it is necessary and indispensable to realize clearly what the vital purpose of such an education is. The art of healing rests upon the science of medicine. In plain language, this means that to employ proper and effective methods in treating disease there is needed such a thorough acquaintance with the structure and composition of the human frame and its processes in health that the exact disease from which it suffers may be detected and understood and its course and effect determined.

This is only another way of saying that correct and intelligent diagnosis is the foundation and prerequisite of all successful treatment. While drugs, surgery, physical manipulation, diet and exercise all play their part in restoring normal conditions, they are only methods of applying the lessons learned from and indicated by diagnosis. If diagnosis is faulty or careless the methods employed necessarily lack precision and suitability and fail in their effect.

Ability to make a correct diagnosis is therefore the primary end of all good medical education. Diagnosis does not necessarily end when a decision has been reached as to the particular disease to be combated, for it continues during the treatment to operate with regard to each successive phase of the case. It is as vital in realizing the effect of the treatment, in detecting each manifestation of what are called complications, and in recognizing progressive improvement or the reverse, calling for a continuance or a modification of the particular treatment. In this aspect it becomes part of and is partially merged in the method of healing employed.

The second and scarcely less important end of medical education is the imparting of sufficient knowledge to enable the treatment of disease, including what I have indicated as really part of the diagnosis, to be determined and to be intelligently applied, varied or improved.

If diagnosis is not regarded as an exercise of the highest medical skill and study aided by experience, but is replaced either wholly or in part by a theory, no matter how plausible or persuasive, it necessarily precludes the practitioner from exercising the highest qualities of his mind and judgment and hampers him in expanding his experience in the light of the development of medical science and experiment.

The progress of medical science and investigation is continuous, and a survey of the changes in medical opinion and methods in the last half century, having regard to the introduction of anæsthetics, antiseptics and serums, the extent of bacteriological research and chemical analysis, and the importance of diet, exercise and cleanliness, is most striking and impressive. These necessarily enlarge the

scope of medical education into regions not originally traversed by it, and render it imperative that it should be most comprehensive and exacting if it is to include these modern imperative and enlightening studies. I direct particular attention to the very important considerations suggested by the medical practitioners in their statements before me on the 3rd and 5th days of November, 1915, as to the practical and striking results of these studies in combating and in some cases entirely preventing certain fatal diseases. These matters cannot be disregarded in creating the balance of convenience in such a vital question as private and public health and the duty of the state in relation thereto. And I have not been able to find any escape from the impression which these results force upon one's mind in weighing the advantages of the present system against what is now proposed.

I may add a definition of "modern medicine" by one of the foremost physicians on this continent, Dr. L. F. Barker, of Baltimore:

"Modern medicine, based on the application of the method of science to the study of diseases and of their cure and prevention, can give no recognition to dogma, to merely deductive systems, or to doctrines that rely simply upon preconceptions. To the medicine of to-day nothing is acceptable that will not stand the test of the scientific method rigidly applied, and anything is acceptable that will stand that test. The medicine of our time is willing to make use of facts no matter how or where they may be found. Truth is truth and always welcome, whether discovered by a worker in a science department of a university, or by a sectarian, be he allopath, homeopath or osteopath. Error is error, to be refuted, whether it emanate from a professor in the best university medical school, or from any sectarian worker. Knowledge in medicine, just as in other sciences, can be acquired in only one way—that is, by the application of the scientific method. This method consists in collecting facts carefully, in arranging them according to their similarities and sequences, in establishing relationships among the facts collected, and in epitomising them in the form of general laws or principles, the validity of which depends upon their verifiability by other trained and healthy minds. Observation, reflection, the devising of hypotheses to be tested by experiment; and observation again during experimentation—this is the endless chain of mental procedure that is used in investigation in medicine as in all the sciences. Even the representatives of the medical sects admit that the work of the first two years of the medical school in the preclinical sciences should be the same for all medical students. But why should there be any departure from the scientific method when the work of the clinical subjects of diagnosis and therapy are approached at the middle of the medical student's course? There is only one great science of medicine, just as there is one science of chemistry, one science of physics, and one science of biology. We hear nothing of sects in physics, or of sects in chemistry. Nor should we, in my opinion, hear anything any longer of sects in medicine."

In the Province of Ontario, for the past fifty years at least, medical education has, since the days of medical schools, been in the hands of the University authorities and of the College of Physicians and Surgeons, a body representative of the regular medical profession. The universities grant degrees in medicine, while the college possesses the right to fix the curriculum of study and to grant licenses to practise medicine in the Province of Ontario. The universities have provided the costly and indispensable equipment for study and research in chemistry, physics, bacteriology, anatomy and other technical subjects, and the students have had the advantage of the proximity of large and thoroughly efficient hospitals in which comprehensive and varied clinical instruction is provided.

As a result of this combined system the didactic, scientific and practical instruction has been wholly in the hands of the regular medical practitioner, and the clinical side of the student's work has been entirely dominated by modern scientific medicine, and no other system, belief or cult is able to take advantage of practical hospital study and experience. In addition to this, all public medical appointments in the Province must, by statute, be filled by registered physicians.

That as a consequence of the foregoing, any system, belief or cult, while its students may take advantage of the university training so far as it fits in with the tenets of their peculiar method, is completely debarred from clinical experience and instruction for the reason that no hospital organization permits practitioners other than those of the regular school to attend patients or give clinical instruction. To combine other systems with the one now in vogue in hospitals raises a practical question the solution of which would necessitate patients, in a hospital managed by regular practitioners and staffed with attendants and nurses trained by them, either remaining without the usual care of those in charge or being looked after by a duplicate or triplicate staff of nurses and attendants, as well as by practitioners not recognized by those in command. This I am convinced is a practical impossibility, unless patients are to be left to those who, while skilled in medical care, as it is usually understood, know little about osteopathy, chiropractic, etc.

Hence the question of the training and admitting to practice of those not taking the regular medical course of study and instruction is met at once with a serious difficulty not to be got over by argument or theorizing. This results from the fact that there is not at present in Ontario any training college or institution of an osteopathic, chiropractic (except as noted below) or drugless healing character, nor any hospital at all in which even in the most limited way clinical instruction or experience can be given or gained in the method advocated by those cults. I think this is recognized by those practising in Ontario who appeared before me.

I may here append a quotation which will be found in the supporting statement, which should be carefully pondered:

"The logical position of medical sectarians is self-contradictory. They have practically accepted the curriculum as it has been worked out on the scientific basis. They are thereby committed to the scientific method, for they aim to train the student to ascertain and interpret facts in the accepted scientific manner. He may even learn his sciences in the same laboratory as the non-sectarian . . . All physicians, summoned to see the sick, are confronted with precisely the same crisis, a body out of order. No matter to what remedial procedure they incline—medical, surgical or manipulative—they must first ascertain what is the trouble. There is only one way to do that. The osteopaths admit it when they teach physiology, pathology, chemistry, microscopy."

Notwithstanding the practical impossibility of incorporating in any real and useful sense these various cults into the system of medical education adopted in this Province, even if they were willing to be absorbed, there is no reason why whatever good exists in their systems should be lost to the public. The regular medical profession has presented its case against those whom they regard as intruders and worse, with pertinacity and force. But the most extreme in that profession, in which non-progression is almost a negation of its principles, are the product or representatives of a school which, as of old, cry: Can any good come out of Nazareth? but take no sort of pains to find out the true answer to that inquiry. They are not willing to look the thing in the face for fear that they might see

something. At all events, their attitude is and has been that of knowing nothing and wanting to know nothing of these cults. I am glad to say that they do not, in my judgment, properly represent the more advanced and open-minded of their profession. Equally so do the adherents of these systems ridicule or ignore the claims of ancient and modern medical science and practice.

I am not at all persuaded that, as to the purely therapeutic side of these systems, the position I have mentioned is either wise or right. As I see it, some of what is done by osteopaths and chiropractors, manotherapists, etc., is in practice, where needed, supplied by regular practitioners or under their direction, though in an entirely subsidiary way. The average regular practitioner has, in his dislike of what has been unauthorized, and because of the demands upon him of a very exacting and busy profession, generally shut his eyes to anything savouring of it, and so has declined knowledge and refused to progress along the lines of physical therapy. There are encouraging signs, however, due largely to the war, but also to the large-minded ideas of the younger and some of the older men, in the direction of giving to physical therapy its due place in the art of healing.

One definite feature should be fully borne in mind. It is that anyone charged with the duty of studying, teaching or using modern physical appliances or methods for the healing and alleviation of disease or disablement should be broadminded enough to make a fair and comprehensive and independent study of osteopathy, chiropractic, and other forms of manipulative treatment, so as to ascertain and fix the definite value in each system so far as it exists, and to see that that value is put to use, and thus that the public have access to it. In this way, and in this way alone, can those who honestly believe in the practice and its healing qualities be satisfied, and medical science vindicate her reputation for fairness as well as for comprehensiveness.

There is much good sense underlying a caustic remark made by Dr. A. F. McKenzie in an address to which I refer elsewhere: "The occasional formation of a medical heretical cult may thus at times do either direct or indirect good by calling our attention to some phase of truth that is for the time being neglected by us. While . . . most heretical cults are largely the offspring of enthusiastic ignorance . . . there is often a proportion of truth in their delusions. The optimistic prognosis of enthusiastic ignorance will sometimes accomplish, for the time at least, greater good than the dubious or gloomy outlook of fuller knowledge."

I have in the Supporting Statement collected from among the many I have read and heard some of the most striking statements upon the present standpoint of medical education and the radical changes which have occurred in regard thereto. I do not attempt to summarize them in the report, as they can only be fully appreciated if read in extenso.

(See Supporting Statement "D," p. 132.)

CHRISTIAN SCIENTISTS.

(See Supporting Statement "E," p. 147.)

The Christian scientists disclaim the practise of medicine, and rely upon prayer and faith. So far as public health regulations are concerned there can be no doubt that whatever method they adopt they should be required to conform to them, if they intervene in any way in the cure or alleviation of disease, as they unquestionably do when they become the medium for effecting the desired result. Whether they see the patient or not, or whether they merely pray for him, if their efforts or doctrine really and in practice result in eliminating the regular practitioner, either because the patient desires it or because his friends do so, then the interests of public health throw on them the responsibility for any possible mistake in the nature of the disease. They should, therefore, conform to present or future health regulations, and should, where they act for gain, be required to possess sufficient medical knowledge to recognize diseases pronounced by the health authorities to be communicable.

Subject to that, and in so far as what they do is solely an exercise or practice in good faith of the tenets of their religion, no satisfactory reason has been alleged for putting them or any church or body in the category of practising physicians. But their rights should be carefully restricted to the bona fide exercise of the tenets of their religion, and they should possess no other or different right or immunity from that enjoyed by the clergyman or minister who is called in for the spiritual benefit of a member of his communion, and whose ministrations often react beneficially on physical suffering.

It should also be provided that when a person claims to be practising the religious tenets of any church, for gain, and the practice is apart from the church building or the home of the person treated, the onus of bringing himself or herself within the exception shall lie on the person so claiming to be practising such religious tenets.

There are, according to the last municipal census given in the Assistant-Commissioner's Report for 1916, some 1,236 Christian scientists in Toronto. In Ontario it was said before me that there were 6,000.

The exception that necessaries in the case of children should, notwithstanding any qualification, continue to mean and include medical attendance by a registered physician ought to be clearly maintained and explicitly stated.

A penalty of fine or imprisonment, or both, sufficiently heavy to deter people from incurring it, should be imposed upon anyone practising such religious tenets upon or in reference to any person suffering from any disease dealt with as contagious or infectious in the Public Health Act, unless before such practice is begun notice in writing is given to the local health authorities of the presence of such disease.

I have dealt with more detail, in the Supporting Statement, with the attitude of Christian scientists towards medicine and the result from a public point of view.

(See Supporting Statement "E," p. 147.)

THE ENGLISH SYSTEM.

I have carefully considered the suggestion as to the English system of letting anybody practise medicine without let or hindrance, subject to the provision that he must not call himself a doctor, nor collect fees. I have also had brought before me what is called the Wisconsin idea, i.e., that a jury shall, in all cases, and upon the evidence of experts or practitioners in that particular school, say whether what was done was an improper method of practising medicine.

I have not been able to reach a conclusion that either system is possible in Ontario. Almost all the states of the American Union, and all the provinces of Canada have their medical laws determining the status of those who practise. If Ontario were to throw down the bars and admit everyone to practise here, it would inevitably get the riff-raff of every community on this continent dumped upon it. Besides this, such a law would be a reversal of the policy pursued here for so many years with, at all events, considerable and in recent years conspicuous success, so far as scientific results are concerned.

DENTISTS.

(See Supporting Statement "F," p. 150.)

The School of Dentistry established by and under the control of the Royal College of Dental Surgeons of Ontario is, so far as I can judge, fulfilling its function satisfactorily. Its profits are large, and are paid over to the Royal College, which, in my judgment, needs no such yearly surplus as it at present has and as it will receive in the future.

The recommendation I make is one which will, I have no doubt, appeal to those conducting the affairs of this profession, and it will, if carried out, enable the university and hospital authorities further to assist in the education of the dental students. It is, that the net examination fees be paid over to the University or Universities aiding in the necessary medical education of dental students, to be spent by the medical faculty in providing increased facilities of and equipment for medical education.

I have also set out and discussed the financial statement of the Royal College in the Supporting Statement, and have there given my reasons for this recommendation.

(See Supporting Statement "F," p. 150.)

OPTOMETRY.

(See Supporting Statement "G," p. 154.)

Optometry stands upon a somewhat different footing, if regarded from a medical and educational standpoint, from those already considered. While it is quite true that the fitting of glasses may be based in some cases upon a misapprehension of the causes of the defective vision, there is no doubt that defective vision owing to natural causes such as old age or defects in the physical structure of the eye may be greatly helped and relieved by the use of proper lenses. It would seem unreasonable to make the many suffer for the few unless some overriding consideration is at stake. It is quite possible to insist upon adequate education in physics and optics, apart from a complete medical education, so as to enable those possessing it to measure and design the lenses required for defective eyesight in ordinary cases. In the instances where the effect is based upon other causes than those usually found to exist, the procuring of glasses may, by affording temporary relief, postpone to the patient's detriment the treatment properly required, but these cases are comparatively rare. This difficulty can be met in large measure by adding to the course in physics and optics sufficient instruction in medicine to enable abnormal conditions to be distinguished either at once or speedily, and sufficient protection may be afforded by a provision to this end in any legislation affecting what is called optometry.

In view of the limited specific attention paid to the subject in the universities, and the neglect by the majority of the medical profession of the mechanical refracting branches, as detailed in the Supporting Statement "G," and of the fact that the optometrists have provided no education worthy of the name of their students, and because Ontario is surrounded by 36 States and four Provinces duly regulated, there is much reason to fear that there is truth in the remark made before me that optometry is in a worse condition in this Province than in any Province of Canada or State in the American Republic.

It is easy to see how that may result in its becoming a dumping ground for those unable or unwilling to qualify under the various foreign regulations.

It appears that there are about 900 calling themselves optometrists in Ontario, of whom 100 practise in Toronto. In Toronto, the regular medical practitioners number 254, of whom about 28 are doing refraction work. In smaller places the proportion is much less—the details are given on p. 428 of the evidence. There are in the whole of Ontario 65 medical men who have so far specialized in the eye as to have taken a post-graduate course. This, of course, had to be taken out of Ontario.

I was not able to elicit any satisfactory answer to the question of what actual training was given to students in the University here. The utmost I could get was that what was afforded was a "good ground work" or "fundamental knowledge" with ability to prescribe for the correction of ordinary optical defects, with practical instruction after they began to practise.

The ground seems, however, to be much cleared by the statement of Dr. R. A. Reeve, whose experience in this department would lend great value to his opinion.

Speaking of the benefit to intending students of association with those now practising optometry, he added:

"Then if they wished to have a superior course, approximating to that given in Columbia University, there is, for example, the fine Technical School in

Toronto, which the principal, Dr. McKay, assured me personally would provide all necessary facilities for high-class instruction in optics, theoretical and applied. And in regard to certificates and licenses, a certificate from Principal McKay won by students taking such a course and the necessary examination would carry weight anywhere in the country, and would meet the requirements of the license to practise as an optician. That, sir, is my solution of the difficulty."

In this view Mr. Maybee agreed, saying:

"We are perfectly in accord with most of what has been brought out by Dr. Reeve. We are in accord with the view that the University or the Collegiate Institutes should have such a course, so long as it is kept as a course in optometry. We do not want to go into medicine."

An examination of the returns sent to me by the members of the Optometrical Association of Ontario discloses the following information and points strongly to the practical absence of any scientific educational course having been taken by the majority of those now seeking legislative protection.

Out of 123 who have made returns and who, out of the whole 900, appear to be those who have endeavoured to make progress, it appears that only 36 have attended any colleges except the so-called and elusive institutions existing from time to time in Toronto. Even in these cases the dates and in some cases the length of time given indicate that the courses when taken in foreign colleges were for the most part most fragmentary in point of time. Nor have I any way of gauging the standing of any of them except that 11 have taken correspondence courses, and 66 depend upon private instruction and books. There are 9 practising in Quebec Province.

As to experience, the data given is not clearly confined to actual optometrical practice; it is associated in many cases with the sale of jewellery. However, giving it its best aspect, it will be found that there are in Ontario 30 whose experience goes back beyond 1900, and 46 of those beginning between 1900 and 1910, and 18 after 1910. So that the bulk of the members of the association have not had any modern optometrical training except where their practice or their ambition required or prompted it. As to the remainder who have remained in the background, it may be presumed that had they come forward they could not have bettered the showing.

It is clear from what appears in the Supporting Statement "G" that in a medical education there is not sufficient specific instruction in this branch, and that this is well recognized professionally. This should be remedied. In Ontario there are only 65 medical men who specialize in opthalmology, while there are now 900 practising optometry.

Apart from the university courses, which are part of the regular medical course and occupy several years, there is no sort of instruction provided for those desiring to be optometrists, except such as is afforded by a course offered by Mr. Maybee, himself an optician in Toronto. Manifestly, there is a great lack of efficient and scientific preparation, and any move towards granting what is sought by the optometrists must subject them to much greater efforts than they have hitherto been making.

I see in this, however, no reason why optometry should not acquire a definite status if it is willing to do so at the cost of such a liberal education as will fit its practitioners for their work.

There are ample facilities at hand. The Universities of Toronto and those of Kingston and London, if necessary, and the Toronto Technical School, can evolve such a course and so provide its mechanical requirements as to secure: (1)

Sufficient knowledge in medicine to detect disease in the body, disclosed or indicated by the eye;

(2) Sufficient acquaintance with the physiology and pathology of the eye itself to recognize local diseased conditions;

(3) A thorough knowledge of practical optics and refraction.

This course might well be a 2 years' course, either coincident with a general medical course or apart from it, except so far as it bears on the objects above indicated, and intended to be covered by it.

I find that the optometrists are practically united and unanimous in their views, and they appear willing to co-operate in raising the standard of their own education. I believe what they want can be granted without detriment to present or future medical ophthalmological education, provided always that they are willing to accept the proposed course and standard. The aim of that course is not to make doctors, but refracting opticians, and to secure the public against eye glasses being substituted for medical or surgical treatment. This last safeguard can only be secured by the possession of a medical education sufficient to enable a limited practitioner to detect diseased conditions, which he should then refuse to treat. It is one instance where a particular organ of the body requires special mechanical aid which may be supplied by those not entirely skilled to treat disease, provided they are not ignorant that disease may exist and may be evidenced by that otherwise sound organ.

So far the optometrists have not provided proper educational facilities for themselves or their students, and their acquisition of any separate status should depend entirely and absolutely on their loyal adoption of the medical course which I have indicated.

With regard to those at present practising it should be provided that they should within 6 months pass the examination provided by the means I have suggested in the Supporting Statement, in which case they would be entitled to a license.

(See Supporting Statement "G," p. 154.)

NURSES.

(See Supporting Statement "H," p. 161.)

The whole subject of nursing and the training of these indispensable aids to the physician has caused me a great deal of study.

The situation is such that thanks are due to the nurses themselves and to the hospital authorities for the high position occupied by nurses trained at many training schools in Ontario. The weakness is one due to want both of co-ordination and the standardizing of preliminary and professional education. While nurses trained in large general hospitals, sanitaria, children's hospitals, etc., become extremely efficient in matters which their experience covers, the fact remains that each suffers a lack in some one or more departments of nursing which cannot be made up in Ontario. For instance, a nurse in our Isolation Hospital may never see a case of purely nervous disorder, and one in a sanitarium may know nothing of the diet and care of an infant. The missing experience has to be sought elsewhere, because there is no provision for it in Ontario, and it is to be

found in the post-graduate courses in the United States, where so many of our nurses go, and, having gone, remain permanently.

Every effort should be made to prevent this, and to do so will need a very careful survey of the conditions existing in Ontario. But the remedy is clear, and that is co-ordination between and standardization of all hospital training schools, great and small, and whether devoted to infectious diseases, children's cases, tuberculosis, nervous disorders or general practice. In no other way can the lack which each individual nurse suffers be made up. The smaller hospitals could give fundamental training in science, while the larger might give the varied but essential experience in different departments.

I am glad to say that the Department of the Provincial Secretary and the nurses themselves are alive to the difficulty at present existing, and the Assistant Provincial Secretary, when before me, suggested an amendment to the present Act which will cover every hospital and will pave the way for the needed co-ordination or inter-relation of each one to the other.

But further than that, the practical difficulties in the way, which I have dealt with in the Supporting Statement on this subject, will have to be earnestly studied so as to afford such a solution as will not interfere with the effective carrying on of large and small hospitals. Whatever is done, it must not be lost sight of, that nurses are now taking their places as experts in their own field, and should have much to say as to the plan ultimately adopted.

Provision should be made for a uniform preliminary educational qualification, as well as for a standardized and comprehensive professional training, with outside inspection and strict examinations. And in this some way must be found to enable the student nurse in a small centre to be shifted to larger and more varied surroundings, and for those in general practice to study at special institutions, and vice versa.

The course of study has been suggested by the Graduate Nurses' Association, and will be found at p. 167.

A Council of Nurse Education is also advocated. This is a matter of detail which is, however, most important in view of the apparent necessity of inspection. This necessity arises from the conditions which are found to surround the nurses in small and in some larger institutions.

The amending of the Statute now in force in Ontario, so as to include all hospitals and its practical carrying out, is urgently needed in order to reach a proper standard in the education of nurses.

Provision should be made for some uniform preliminary education before entrance to the training school, uniform curriculum, teaching and examinations, constant inspection of training schools, the maintenance of a proper standard of equipment and facilities, and the granting of diplomas showing qualification attained.

This law or regulations under the present Act to carry out these desired steps can easily be framed. But there are some practical difficulties to be faced in the matter before a perfectly self-contained system can be produced. One of these is the fact that there are in many places only small hospitals, where the nurse's experience gained is somewhat limited. The training of nurses in children's hospitals, isolation or tuberculosis hospitals, and in hospitals in insane asylums and sanitaria is all more or less specialized and results in a deficiency in some respects. Then, again, the nurses in large general hospitals may fail to get experience in children's or in nervous and mental cases.

To meet these deficiencies nothing can be done except by shifting those in training to places where their particular lack may be made up. This cannot be done without co-ordination and standardization, and indeed without what may be termed affiliation under proper and practical regulations. Matters should be so arranged that each nurse during her period of training should cover each phase of nursing experience, and if each training school had the same standard the transfer could be accomplished, if the schools were properly inter-related, without detriment either to the institution, the student or the patients. There are no doubt some things that will have to be overcome—as, for instance, the inability of certain hospitals and institutions to take in additional or outside nurses for the purpose of special training. In the Sick Children's Hospital in Toronto, where infant feeding and the preparation of food constitutes a special department, it is not possible to take in and teach more than are needed as student nurses for the hospital itself, which treats about 3,000 children per year.

As against this, it is pointed out that in Toronto there exist Infant Homes, Houses of Providence, etc., where there are children's wards, and where such training could be given if the matter were taken in hand. I may add, too, that there is no reason why the course in dietetics, both for adults and infants, in the Toronto Technical School should not be utilized to enable nurses to fill out or add to their knowledge in that respect.

I may point out that the really serious nature of the want at present existing for filling up or completing a nurse's training is that there is no post-graduate course here at all, and the nurses who want an all-round training must go to the United States for it, with the result that very many of them stay there, and are lost to Canada.

Another matter which has come up is the application by the Graduate Nurses' Association of Ontario for legislation which would, in my judgment, in effect, give them such a status in Ontario that they would virtually exclude all others than their members from profitable practice. Thinking this undesirable from a public standpoint, I have thoroughly examined the subject in order to ascertain whether there was a present danger of excluding nurses who could not qualify for this association, and whether there was or was not likely to be a class outside graduate nurses whose services in a public or private capacity should prevent any monoply being granted to any one class.

I find that there is a very distinct need for a nurse not trained fully in a public hospital, yet the tendency is rather to insist upon public hospital training as an essential qualification not merely for ward and hospital work in all its branches, but for public health and sanitary work, welfare work and duty in sanitaria. But there does exist a complete want of special education in Ontario for those various avenues of work which I have just mentioned, as well as for the practical nurse; and in consequence there is a far greater lack of nurses for each of those departments than there should be, considering how much good such nurses can do both in a large city and in small centres of population, as well as in rural districts where the services of a medical man are not readily available and are often absent altogether.

The question is, therefore, not whether a monopoly will be created, but how to so arrange that the registry will be conducted so as to be available in all localities with such complete information as will make it valuable to the public.

This can only be done by Provincial authority, which has, in the *Hospitals and Charitable Institutions Act*, taken power to train nurses in Provincial establishments, and who might well add to that a registry for nurses. This registry

should include and classify all nurses, having regard to their education, training or special work, and should so provide that if it should be found at any time possible to supply such a lower class as I have mentioned it might secure a special registry. This register should be so arranged as to cover the whole Province, and registration in it might be made permissible through the local Health Officers, so that each locality would be furnished with knowledge of its equipment in that respect. This registration should be renewed annually, or biennially, upon a declaration showing that the nurse is still employed in her profession, and where. This will enable a check to be kept on those who leave the profession, or fall behind, and then want to take it up again without having kept themselves up to date.

The training of nurses in public health work and sanitary science, and in what is called welfare work, can best be done in large centres such as Toronto, London, Kingston and Ottawa, and could, with great advantage, be added as a post-graduate course to the Department of Social Science of the University of Toronto, aided by the complete and admirable equipment of the Toronto Technical School. It is indispensable, however, that those who learn should, by arrangement, go with the present public health nurses upon the ground covered by them and learn practically as well as understand theoretically.

With regard to the incorporation of graduate nurses, I see no objection to what they ask, provided the word "registered" is kept for official use, and further, that anyone officially registered, other than those specially registered as practical nurses, should be eligible for membership in the Graduate Nurses' Association or other nurses' associations, all of whose by-laws as to qualification for membership should be subject to the approval of the Lieutenant-Governor in Council.

With regard to what is called the "practical nurse," i.e., one without hospital training, I was glad to note the remark of Miss Gunn, the very efficient head of the Toronto General Hospital training school for nurses, at a sitting of the Commission:

"I do not think anyone in the community realizes more than the graduate nurses themselves that the practical nurse has a place in the community; she has a work to do for which graduate nurses cannot be supplied, because we have not enough nurses. We are very glad to have the practical nurse, to have her do the work that she is able to do."

This is the modern view, as stated by Miss Goodrich, Assistant Professor of the Department of Nursing and Health, in the Women's College, Columbia University, New York. In New York there are two institutions giving this practical training, and Dr. Bradley, General Director of the Murray Thompson Fund, Boston, has been working on the problem for years.

I may, in this connection, call attention to the statement of Miss Carson, the head of the Detroit Home Nursing Association, herself a Canadian and graduate nurse, who is in charge of a successful institution for the training and employment of practical nurses. This, and some kindred institutions also in the United States, employ and teach women of all ages and classes, who are unable to take hospital training, to do those simple but indispensable and practical offices which are so helpful in a sick room and for a sick person.

The graduate nurse at the head of the institution instructs these women in the ordinary professional and technical methods of dealing with cases which are under medical care but which do not require or cannot afford a professional nurse.

Miss Carson's account of the work done and its success is well worth considering from the standpoint of public health and welfare.

The fees of graduate nurses are in no way subject to regulation. I think that is a matter which might be fixed or approved by the authority which registers and classifies the nurses.

I cannot pay too high a tribute to the views taken by the nurses on the subject of education for their profession, and to the way in which their case was presented; and I am confident that the suggestions that they make will be in the direction of better standards and improved correlation of the various training schools.

Anyone really interested in the subject of nursing and its proper organization and efficient working under modern social conditions, will find in the Supporting Statement much of interest. I may refer particularly to the report of the committee appointed by the American Hospital Association, of which the late Dr. Bruce Smith was a member, and to the explanation of work like Miss Carson's in Detroit which is found therein.

(See Supporting Statement "H," p. 161.)

RELATIONS OF THE UNIVERSITY OF TORONTO AND THE COLLEGE OF PHYSICIANS AND SURGEONS IN ONTARIO.

These relations have been exhaustively discussed in one respect, i.e., the claim of the University of Toronto to have its degree recognized as entitling its holder to a license to practise medicine in Ontario.

The controversy has called attention to two facts: one, the acceptance by the College of Physicians and Surgeons, of the University examinations in all the highly technical subjects, reserving only medicine, surgery and obstetrics, three somewhat general subjects; and the other is the very great difficulty and expense in the way of standardizing the educational results of university training except by control of the curricula and independent examinations.

The comparatively small, though not neglectful, part which, in my judgment, the College has taken in initiating changes in the University curriculum of medical study and the slight hold which is given by an independent examination in only three, though most important, subjects, leads naturally to a consideration as to whether the University claim is not well founded.

This is put forward in this way by the President of the University:

"Although the College of Physicians and Surgeons of Ontario is not a teaching body, yet its Council fixes and determines the curriculum of studies to be pursued by every student who desires to acquire the right to practise medicine in Ontario, and the University of Toronto is required by the statute to observe and teach that curriculum.

"The Medical Faculty of the University is made use of by the regulations of the Medical Council for the teaching of students without any contribution towards its cost, yet its students and graduates, notwithstanding their long course in the University, and notwithstanding the proofs of qualification they may have given by their examinations and by their diplomas, are not recognized as possessing any such qualifications, but they must follow the same course, for the same length of time, and submit to examinations as if they had not had the advantages referred to."

"The conditions in the Province with respect to medical education which called for the creation of the Medical Council, and the vesting in it of powers to determine the qualifications of those seeking to practise medicine, have radically changed. Now there is the great Medical Faculty of the University of Toronto, part of a State institution having only the interests of education at heart, and not influenced by any considerations of private gain, and fully equipped to impart medical education and determine upon the qualifications of candidates for its degrees.

"The Board of Governors is of opinion that the position in which our great Provincial University is placed by the existing legislation upon the subject of medical education is harmful and humiliating and against public interests, and the Board earnestly contends that the degree in medicine granted by the University should entitle the holder to registration and to license to practise, without further study or examination, and in support of this contention the Board must refer to the exceptional position in the Province held by this University. In doing so, the Board wishes it to be understood that no criticism of any other university is made or intended."

These demands, if they can be properly so-called, seem at first sight to be not unreasonable. Indeed, they have been, in fact, in the working out of the relations of the University of Toronto and the College of Physicians and Surgeons, largely acceded to. But this has not been done in such a way or to an extent sufficient to remove the disability from which the University contends it suffers.

The question, however, really raises larger issues than the statement made in behalf of the University actually covers. These may be summarized as follows:

(1) Is it necessary to maintain the present examining Board separate and distinct from the University faculties?

(2) If the claim of the University of Toronto is granted, should the other universities be similarly treated?

(3) Is it practicable to do away with the examining Board and substitute therefor a system of inspection so that a license can be granted upon the production of a diploma from one of the universities?

(4) If a separate examining Board is retained, is the present composition of the Medical Council and its relations to the University satisfactory?

In the present condition of affairs the College of Physicians and Surgeons promulgate the curriculum, approve of the university and college which alone the student can attend, and then finally examine for license. This throws all the burden of providing equipment, staff and buildings upon the Universities. These institutions not only teach but examine for degrees. It is at this last point that some relief from a double examination is given to the student, because the College of Physicians and Surgeons adopts for license all the faculty examinations for degrees except in three subjects, i.e., medicine, surgery and obstetrics, and in these it conducts its own examinations.

These three subjects are very extensive, and an examination in them may and does take a wide range. But even if their extent were comparatively narrow, they would nevertheless prevent the faculty examination for a degree from being the sole passport to license. And this very reduction in the factor of difference between the two examinations forms a very natural argument against the necessity for its retention. It eliminates, of course, much objection from the student point of view, but the University of Toronto contends that it places it in an inferior and subordinate position which, in its contemplation, it should not occupy in view of its standing, the thoroughness of its training and examinations.

In its broadest aspect, such a contention naturally suggests a comparison with the British system and that followed in the United States. The British method is thus stated in the memorandum submitted by the University of Toronto:

"In Great Britain, a degree in medicine of any one of fifteen Universities there is recognized as entitling the holder to registration and to a license to practise. The plan in force in Great Britain respecting the admission to practise and the rights conferred by the University degrees is the following:

"The General Medical Council of Great Britain consists of representatives from 24 teaching and formerly licensing bodies, of which 15 are universities, also 3 representatives elected by the medical practitioners registered in England, one representative elected by the medical practitioners registered in Scotland, and one representative elected by the medical practitioners registered in Ireland; in all 29.

"The candidate for a professional course in medicine passes a matriculation examination, the standard of which is fixed by this General Medical Council, and must register with the General Council within 15 days of commencing study and spend five sessions of eight months each at an institution where the standard is assuredly maintained under the inspection of the General Medical Council.

"The General Medical Council fixes the standard of proficiency, and it is their duty to secure the maintenance of such standard in all teaching institutions mentioned. For this purpose inspectors are appointed in such number as the Council determines, and these shall attend, as the General Council may direct, at all or any of the qualifying examinations held by the bodies aforesaid. Thus the medical degree granted by one of the aforesaid universities whose standard has been approved by the Inspectors of the General Medical Council qualifies the student for a license to practise."

In the various States comprising the American Union the almost universal practice is to constitute one independent board for examination and license. This is the case in all except seven, these being Arkansas, Connecticut, Delaware, District of Columbia, Florida, Louisiana and Maryland. And, speaking generally, it is a feature of their system that the fees received for examinations and licenses support and pay the Boards without State assistance.

In Canada, Alberta, Saskatchewan and British Columbia have Medical examining and registering Boards elected by the profession.

In Manitoba, the University of Manitoba examines, and the Council elected by the profession licenses.

In New Brunswick and Nova Scotia, the Board which examines and licenses is partly appointed and partly elected.

In Quebec, the Provincial Medical Board consists of 41 members, of whom 35 are elected, and 6 are appointed by the medical faculties of McGill and Laval (Montreal and Quebec) Universities. They regulate the admission to the study of medicine and license to practise.

The subjects of study are fixed by statute, and the curriculum is a matter of agreement between the Board and the faculties of medicine.

In dealing with this suggestion of the University of Toronto, it must be borne in mind that the present system of licensing is carried on without expense to the Province, except in so far as the Provincial Government aids the University by an expenditure large in amount which is almost wholly due to the desire of the Government to secure by proper equipment and an adequate teaching staff the essentials of a proper medical education. Any change in the direction of inspection must confine itself to the appointment of inspectors to be present at

the examinations (as in England), or must extend to inspection of buildings, equipment and teaching methods. Whatever additional method is adopted it is bound to produce a further expenditure which must fall either upon the students in an increase of fees, or upon the Provincial revenues.

Furthermore, inspection must extend over all five years (or possibly six) of a student's course, and must therefore be placed in most competent hands. If inspection extends to the buildings and equipment, and the methods of training in all the years, it will demand most minute, painstaking and continuous work, if it is to be of any value, and its difficulties will be immensely enhanced by the fact that clinical and laboratory work form a most important element in a modern medical course. This would demand from an inspector qualities not only of extensive experience but trained powers of observation almost requiring continuous attendance in the hospital and laboratory. It is bound to involve a very serious increase in expenditure.

The British system is the natural outcome of the conditions which prevailed there for so long, and still obtain, owing to vested rights and traditions having to be considered in dealing with old-established institutions.

The British General Medical Council has nothing to say as to the curriculum of medical studies, herein differing radically from the Ontario Medical Council. It must register all those who present a medical diploma from a university, or a certificate of admission to membership in any body authorized to license practitioners of medicine and surgery. It has, however, the right to be present at and inspect the examinations. But there its legal powers stop. It can only protest, first to the examining body and then to the Privy Council. This latter body might disallow the examination, or close the school.

But the General Medical Council, by the use of the element of publicity, has been able to exert a very considerable influence. Its power, continually exercised, of reporting against examinations, including those which are not based upon a proper course of study, has resulted in the establishment of, at all events, a minimum curriculum.

In addition to this, it has endeavoured to bring about a general agreement among the various bodies, and has, in the main, succeeded. But as some of these bodies are not teaching but merely examining institutions, although in a legal way related to the teaching colleges, there is yet a very distinct lack of supervision over both preliminary and premedical education, and medical education itself.

The real and vital situation which this state of affairs produces is that the pressure can only be exerted in relation to the examinations, and only reacts upon the actual training of the student in proportion to the value set by the teaching body upon the ideas of the critics who inspect the examinations.

The ideals which must enter into the conception of proper, systematic and sufficient education must first take root in the teaching bodies themselves. Then the examinations will reflect and exhibit the high standard instead of being only a disclosure of how far the training has or has not been upon a proper basis. They, however, occur only after that training has ended. If the teaching body has advanced beyond the examining body, the examinations will be a hindrance and not a help towards a high standard.

The request of Toronto University has its real origin, I think, in the fact that the Ontario Medical Council has failed to keep up with the extraordinary and marked advancement which the Medical Faculty of Toronto University has evidenced in relation to medical education.

The high position it has taken has been known to those engaged in its service, and has been recognized by the medical profession and the public. But this was brought into due prominence five years ago, when, in an unofficial but searching examination by competent outsiders, it was ranked as equal to the greater medical faculties of the universities of the United States. This eminence was due to generous Governmental aid, and to the ability and devotion of the staff of the University, but it was not, after all, a sudden rise. It was the result of much patient work and thought, extending over many years, the effect of which was only fully recognized when the opportunity of comparison arose.

The reason the Ontario Medical Council has not kept pace with the University of Toronto is partly due to its composition, and somewhat to the undue emphasis placed on its representative character, and also to the inherent lack of executive power to which a mere examining body is condemned.

But while this is true, it undoubtedly possesses the right to fix the curriculum, and to examine, both of which powers the British Council lacks. It has, however, apparently contented itself with accepting the examinations in the subjects in which chiefly the marked advance has taken place, and limited its interference to general subjects in which that influence is less definite and which lend themselves more to average knowledge than to scientific development.

The income of the Ontario Medical Council is very large and has led to an accumulation of money, the expenditure being chiefly payments to the members of the Council and its examiners.

I cannot avoid the conclusion that if the Council had more largely appreciated its opportunities, it could in the past have rendered an immense service to medical education in endeavouring to standardize the training and education in all the universities in Ontario, and in other directions.

The task in Canada which has been undertaken in the United States and in Canada as well by a voluntary association would, if it had commended itself to the Ontario Medical Council, have helped to accomplish great results and have assisted in elevating the standard of equipment, the lack of which has retarded progress in two of the universities. It would also have seconded and perhaps directed the efforts of the Government in its endeavour to assist all three universities.

I have said that the Council has been handicapped by its composition. It consists now of 29 members, of which 18 are territorial representatives. It was resolved in 1914 to reduce these to 10, but the required legislation has not been passed. This reduction would give one representative to each territory comprising 300 practising physicians.

There are also three representatives from the universities having medical faculties, Toronto, Queen's, and Western Universities, and members chosen by the University of Trinity College, the Ottawa University, and the Universities of Victoria College, the Royal College of Physicians and Surgeons, Kingston, the Toronto School of Medicine, Trinity Medical School, Regiopolis College, as well as by every other university college or body in the Province now or hereafter authorized to grant degrees in medicine and surgery, and which maintains to the satisfaction of the College of Physicians and Surgeons of Ontario a medical faculty in connection therewith. There are as well five homeopathic members.

The size of the Council, and the preponderance of outside members on it, while insuring representation of all localities, makes it, by reason of its cost, impossible to hold many meetings. The special and general meetings lasting two and four days in 1914-15 cost $2,334.65 and $3,728.00, respectively.

It is evident that any concerted and continuous action must be almost unattainable on the basis of one or two meetings yearly; that is, if any matters requiring thorough study and consideration are to be undertaken. In 1914-15 there were five executive committee meetings and one meeting each of the legislative and discipline committees. The personnel at the executive committee meetings was made up of three Toronto and three outside members.

Another drawback in the way of the Ontario Medical Council has been the fact that being a body representative of the medical profession at large it has naturally selected the majority of its examiners from practitioners in the various localities which go to make up its constituency. This tends to subordinate qualification to place of residence. It must be evident that it is impossible to secure in that way men who are equal in experience and study to those whose opportunities, due to the proximity of laboratories and clinical facilities on a large scale, have resulted in a wider degree of knowledge of and acquaintance with the rapidly advancing methods of modern medicine.

In the request preferred by the Toronto University, the Western University concurs, while Queen's University prefers the present method of an independent examination by the Ontario Medical Council.

While I recognize the force given to this request from the facts which I have mentioned, I am far from convinced that it should be granted. It is true that in England the degree of a recognized university carries with it the right to be licensed; but the conditions under which that state of affairs arose do not obtain here. If the independent examination were omitted in favour of our universities without some supervisory provision, it would be impossible to secure uniformity of standard. It seems to me that that can only be accomplished, having regard to our present system, by reforming in some way or accepting the present duplication of examinations.

The system adopted in the Province of Quebec is that two of the examiners are selected from the faculties of McGill and Laval, with the addition of one appointed by the Provincial Board, and provision is made that the result of the examinations will qualify for practice within the Province. If a student desires to take the university examination only, so that he may practise, not in Quebec, but elsewhere, he is not obliged to take the Provincial Board examination, but having graduated at the university he may go to some other locality where his degree will give him a standing depending upon the regulations there in force.

There are peculiar conditions in that Province which may make that a desirable thing, but they do not all apply here. To my mind, the primary benefit of an examination in which an outside body participates is that it affords some guarantee as to the maintenance of a common standard. Apart from that element, I do not doubt that an examination of its own students by the members of a medical faculty will be a far more real test of individual knowledge, both theoretical and practical, than one conducted by outsiders.

In the present case the working out of the system in vogue seems in an unusual way, and perhaps accidentally, to cover more than such examinations generally do in regard to the maintenance of the common standard.

There are three examiners appointed by the Ontario Medical Council, and the remaining three are nominated, one by each university. These six examiners work in groups of two, so two or four out of every six students in any university find themselves examined by one from another university and one representing the licensing body. And each university acquires for itself, through its representative,

knowledge of how the others are doing as evidenced by the demeanour, knowledge and quickness of the students as well as by a personal view of the surroundings and equipment of the other universities.

Both these kinds of information are most useful in keeping up an intelligent interest in the work of each foundation, and if an independent examination is to be maintained at all, I do not see how it can be improved upon.

I think it would be most unwise for any university to give up any part of the control of its degree—giving power, such as would be involved in allowing the Ontario Medical College to join in the examinations for degrees, even though by so doing it might do away with a second examination.

This, however, is a matter for the universities, and if they prefer to adopt the Quebec system there is no objection to that course being taken.

The present system gives to the universities, both theoretically and practically, an equal voice in the examinations for license, so that none can be discriminated against.

But I think the universities should have, if they desire it, some right to be heard with regard to the fixing of a curriculum which they are bound to follow, and it would be proper that any proposed changes should only come into force if approved by Order-in-Council after due notice to the universities, unless agreed to by the senates or governing bodies in these institutions.

My views in regard to this subject are in harmony with what I understand to be conclusions of the Report of the Royal Commission on University Education in London, England, dated 15th May, 1911. Its findings on the subject of examinations, under conditions which on this point are quite analogous to ours, are given thus:

"In the Faculty of Medicine, as in other faculties, the aim of the university, as far as regards its students, is education. Examinations are a subsidiary function which can never take the place of education, and may very easily injure it. We think that in the university medical colleges, as in other constituent colleges or university departments, the examination of the students should follow the teaching, and with this end in view, should be conducted by the teachers, that is to say, by the head of each department, and, under his direction, by other teachers in the department, subject to the supervision of two assessors appointed by the faculty and associated with the teachers in the examination. We think it of the greatest importance in medicine as in technology that the record of the student throughout his course should be one of the chief factors in determining his graduation, and provided a true Faculty of Medicine is established we see no difficulty in arranging for this. The faculty would prescribe in general terms the standard of knowledge required, but the professors would interpret for themselves the general regulations of the faculty with regard to their own branches of study, and lay down the courses of study to be followed in their departments. It is necessary that the course of study for a medical qualification should cover such a range of professional knowledge as will be a guarantee to the public that the man who is legally qualified is actually fit to practise medicine. In the professional subjects of medicine, surgery and obstetrics and gynæcology it is, therefore, practically certain that the faculty will always prescribe a range of study for the university degree, which, of course, may go further than what is required for qualification, but will in any case be sufficiently wide to cover that field. The examination of university students should in this faculty as in others be conducted by their teachers, with the assistance of

assessors. The protection of the public is provided for, as in the case of all qualifying examinations in medicine, by the inspection of the General Medical Council

. . .

"We have already pointed out (cf. paragraphs 83 and 85) that the educational significance of merely passing an examination can never be very great, but what significance it has is wholly due to the care with which the examination is related to the actual course of study followed by the candidates. This is a matter for educational experts—for teachers, not for persons whose only qualification is that they have passed this kind of test themselves. When the actual facilities for study and the means of education at the disposal of the candidates are unknown, as in the case of external examinations, the relation of the examination to the actual studies pursued can be only a more or less rough approximation. For that reason the percentage of failures in an external examination is always relatively high. In these circumstances it is clear that the best kind of examination for external candidates is one which is based upon the average studies of a group of students whose means of education and facilities for study are known and are of the same kind as those most generally available for the external candidates. Such an examination we have provided for in the general examinations to be conducted jointly by the teachers and external examiners for students in schools of the university."

In the paragraphs adverted to in the foregoing, reference is made to the real end and aim of education and of examinations as related thereto.

I append some extracts from the sections:

"It is obvious that the tests imposed ought to be designed for the purpose of affording sufficient evidence that the object has been attained which is certified by the degree. Two things, then, must be kept in view in fixing what the tests should be. First, they should be fair tests affording sufficient evidence of what they are intended to prove; and secondly, they should not interfere with or injuriously affect, but should, if possible, assist the education which it is the real end of the university to give. In English universities the main test employed is that of examination. We must, therefore, consider the question how far that test affords sufficient evidence of a university education (1) when conducted solely by external examiners, and (2) when conducted largely by the teachers of the students examined; and how far in each case it is injurious to the real education of the student or can be made to assist its ends.

"On the external side of the University of London, which continues the system of the old university, the only test imposed is that of examination, and the only condition for securing the education of the student is the lapse of time between the examinations, during which he may apply himself to study on the lines of a prescribed syllabus, with or without instruction. Such examinations are necessarily conducted by examiners who, except by accident, have had nothing to do with the instruction of the candidates, and the questions must be so framed as to be fair to candidates who have been entirely dependent upon private study. What, then, does the examination test? All that is provided by a syllabus, and all that the examination can profess to test is a knowledge, at the time of the examination, of the subjects prescribed by the syllabus, because the candidate may get his knowledge in any way he likes. He may work hard and well, and he may have the best instruction, but the test of the examination affords no sufficient evidence of this. As far as it tests his knowledge or information alone, it can obtain evidence only of memory, and not even of lasting memory, because, in the case of some subjects at any rate, cramming is the most successful way of preparing for the test, and it is

notorious that a good coach can enable a candidate even to dispense with cramming more than fragments of a subject prescribed. In some subjects the questions are more in the nature of tests of capacity than of memory, but, as Mr. Hartog points out, in order to afford evidence of capacity the standard of marking in the case of these subjects would need to be much higher than in the case of tests of memory. Whether it is reasonable or not to accept thirty per cent. of the full marks when you are testing memory, it is clear that if the question is intended to test a candidate's capacity to do a thing the percentage of marks required ought to be much higher. 'A boy who can only do right five addition sums out of ten cannot add. A person who reads a thermometer accurately five times and inaccurately five times cannot read a thermometer. A person who understands nine-tenths of the words in an easy passage in a foreign language, with or without the use of a dictionary, but is at sea in regard to the meaning as a whole, has not brought his knowledge of the language to a useful point.' No doubt the successful candidates for external examinations have to work hard. We do not suggest that the examinations are easy to pass; the large percentage of failures is sufficient evidence that they are not. But the large number of failures also proves that a wide syllabus of prescribed subjects, with an external examination as the test of the information acquired, inevitably tends to uneducational methods of work, and that far too many of the candidates are only 'having a shot at it.'

"Even in the case of a true university where the students have had the opportunity of obtaining a university education, a purely external examination conducted by examiners who have nothing to go upon but the syllabus prescribed for the course of instruction, can afford nothing more than we have already described. But the failure will be greater; because the object is not to test the knowledge of candidates at the time of the examination, but whether the students have profited by the opportunity they have had of obtaining a university education. Hardly anyone now defends a purely external examination as a proper test of university teaching. The University of New Zealand, one of the last of the universities to retain this form of examination, adopted under the influence of the old University of London, is at present agitating for reform.

"But examinations, even when conducted by the teachers of the university, and based upon the instruction given by them, ought not to be the only tests for the degree. It is not right that the work of years should be judged by the answers given to examination papers in a few hours. It cannot be fairly tested in this way. However conducted, such examinations are an insufficient and inconclusive test of the attainment of a university education; and when account is taken of individual idiosyncracies and the special qualities which examinations favour, and when allowances are made for the accidents which inevitably attend such limited and occasional tests, it appears to us only fair that due weight should be given to the whole record of the students' work in the university.

"If the academic freedom of the professors and the students is to be maintained—if scope for individual initiative is to be allowed to the professors, and the students are to profit to the full by their instruction—it is absolutely necessary that, subject to proper safeguard, the degrees of the university should practically be the certificates given by the professors themselves, and that the students should have entire confidence that they may trust their academic fate to honest work under their instruction and direction.

"There is no difficulty whatever in the university providing for such control, regulation and publicity as will be an adequate guarantee of impartiality, and of such a measure of uniformity as may be considered desirable."

I have reached the definite conclusion that without independent examinations the only alternative is continuous inspection of teaching, its methods and quality, and the accessory equipment. This would involve great and, to my mind, unnecessary expense which at present might be avoided.

I have, therefore, recommended the continuance of the present system of examination, which avoids much of the duplication and yet maintains the quality of independence and stimulation so necessary to the maintenance of a proper standard.

I find that there are certain anomalies which have come to light from time to time in regard to reciprocity of license and recognition of outside degrees.

I do not think this matter should be left entirely to the unfettered discretion of the Ontario Medical Council, because it involves in some cases the effect of the possession of a degree and its value. Regulations here and the fee charged thereunder may adversely affect abroad those holding degrees from Ontario universities who are not licensed.

Until recently a graduate of McGill or Johns Hopkins Universities, or of Yale, or Harvard, found on coming here that his degree in medicine did not enable him to register and receive a license to practise. To accomplish that he must attend lectures for a year in the medical faculty of one or other of our universities, and pass an examination at the end of that time, while a graduate of a homeopathic college in the United States, unless it has a short time course, could have got a license at once on merely passing the examination.

For this reason I am strongly of the opinion that all reciprocity regulations of the College of Physicians and Surgeons should be subject to the approval of the Lieutenant-Governor in Council on notice to the universities, unless concurred in beforehand.

This is all the more necessary as the Canada Medical Council has now become a factor both inside and outside of Canada, and any regulations should have due regard to the fact that statutory reciprocity under the Canada Medical Act may require changes in the viewpoint of this Province.

The yearly statement of the income and expenditure of the College of Physicians and Surgeons from June, 1915 to June, 1916, follows:

Treasurer's Report.

To the Members of the Council of the College of Physicians and Surgeons of Ontario:

Gentlemen,—I beg to submit herewith Financial Statement for the Council Year, 1915-16, just ended.

Receipts.

Balance in Bank, June 21st, 1915, as audited			$24,308 77
Assessment Dues—			
Collected by Registrar		$2,538 00	
Collected by Bank	$2,522 00		
Paid in Advance	2 00		
		2,524 00	
			5,062 00
Examination Fees—			
Fall Examinations, 1915		$2,265 00	
Spring Examinations, 1916		8,960 00	
			11,225 00

Registration Fees of Matriculants		2,850 00
Registration Fees of Applicants, qualifying under Dominion Medical Council Certificates		1,300 00
Fees of Ontario Council Licentiates, for Certificates of Standing, when applying to the Dominion Medical Council		35 00
Fees of Ontario Council Registrants, for Certificates of Standing, when applying to the Dominion Medical Council		275 00
Fees of Rejected Candidates, appealing for reconsideration of their papers		115 00
Registration Fees of Licentiates of the British Medical Council, registering in Ontario		300 00
Fines		180 00
Bell Telephone Company, rebate, changing from old to new rating		52
Refund of Court costs, in prosecution case		2 50
One duplicate diploma		5 00
Interest on Bonds—		
Province of Ontario	$1,000 00	
Dominion of Canada, War Loan	250 00	
		1,250 00
Interest on Current Bank Account		415 20
		$47,323 99

EXPENDITURE.

Council Meeting June-July, 1915—		
Members' Allowance	$3,687 95	
Stenographic Report of Proceedings, etc.	116 50	
		$3,804 45
Special Council Meeting, Dec., 1914, Stenographic Report of Proceedings, etc.		70 00
Officers' Salaries—		
Registrar (late Dr. J. L. Bray), 1 month	$229 16	
Treasurer (Dr. H. W. Aikins), 1 month	53 33	
Registrar-Treasurer, 11 months	1,833 26	
Prosecutor	1,200 00	
		3,320 75
Legal Services, general		924 01
Prosecutions—Legal charges, witness fees, Court fees, travelling expenses, etc.		216 23
Executive Committee		513 50
Legislative Committee		562 05
Legislation, disbursements		37 20
Discipline Committee		239 10
Discipline Procedure		70 83
Printing examination papers, diplomas, etc.		573 18
Printing annual announcement		398 45
Telephone service		109 47
Holding Professional Examinations—		
General expenses	$425 35	
Examiners' fees—		
Spring, 1915	$2,299 20	
Fall, 1915	802 80	
	3,102 00	
		3,527 35
Fees Refunded—		
Professional Examination Fees	$280 00	
In cases where appeals for examination standing have been granted	35 00	
Annual Assessment Fee refunded where overpaid	2 00	
		317 00
"Relief Belgian, Medical and Pharmaceutical Professions," contribution voted by Council		2,000 00
Dominion of Canada War Loan Bonds (each of denomination of $1,000, in all $10,000), at price of issue		9,750 00
Royal Commission—Reports of Proceedings		223 30

Royal Commission—Attendance of Chairman of Discipline Committee at Session of Commission		74 00
Royal Commission—Personal investigation, by the Vice-President, of chiropractic institutions in the United States		130 60
Bray, Dr. J. L.—Honorarium to the late Registrar of the College, upon his retirement from office		750 00
Macarthur, Dr. James—Wreath for funeral of late President of the Council	$20 00	
Attendance of two representatives of the Council at the funeral	19 80	
		39 80
Multigraph machine		119 35
Audit of Treasurer's and Registrar's books, vouchers, etc.		75 00
Rental of safety deposit box in National Trust Company's vaults (for safe-keeping of bonds)		3 00
Registrar's Office—Supplies, etc. (this item includes postage, $650.26, on announcements, assessment notices, special circulars to profession, etc.)		768 20
Stenographer in Registrar's Office		780 00
Treasurer's bonds		30 00
Prosecutor's bond		5 00
Stenographer's bond		10 00
Bank charges *re* collection of assessment dues		140 77
Council elections		20 00
Rose, Miss J. A.—Honorarium voted by Council		150 00
Vault—Construction of ground floor addition to		441 94
Property and Building Maintenance—		
Caretaking	$120 00	
Painting, plumbing, carpentering, etc.	194 53	
Electric light, installation	$210 49	
Electric light, service	16 20	
	226 69	
Gas	48 30	
Fuel	193 65	
Water rental	18 48	
		801 65
Miscellaneous		193 18
Balance in Bank, June, 1916		16,134 63
		$47,323 99

All of which is respectfully submitted.

H. Wilberforce Aikins,

Treasurer.

I have formed a strong impression that the College of Physicians and Surgeons enjoys an income out of all proportion to its real needs, and that while it would not be in the interests of the medical profession, or of the Province itself, to reduce the fees for examinations below the proper proportion of the cost of a medical education, such as has been established on this continent, the excess should be devoted to some better purpose than accumulating a surplus while the expense of giving medical training with its proper equipment is so heavy.

Especially is this the case when student or post-graduate courses are so urgently called for, and the need of additional departments, such as physical therapy and optics, is so pressing.

This will be more easily accomplished if the size and basis of representation of the governing council of the College is altered. At present its constitution is founded upon a false principle, having regard to the welfare of the profession, but particularly in relation to its paramount duty of caring for the standards of

medical education, which can only be safeguarded by electing the best and most advanced scientific members, irrespective of their habitat or their academic origin.

The position of the College of Physicians and Surgeons of Ontario is that of an examining body which takes no part in the education of the students, although it has fixed a curriculum and made regulations as to its observance.

In this it is in contrast with the Royal College of Dentists in Ontario, and with the Law Society of Upper Canada, which not only examine but instruct and educate their student body.

It is an old-established body, and can trace its descent through many years of legislation, but its present form was practically settled by statute in 1869.

It has acquired a building on University Avenue for its offices, which cost $18,053.75, and is worth more now. The Council owns $35,000 in Provincial and War bonds, which bring in an income of $1,500 per annum.

It contemplates or contemplated erecting a building suitable for its purposes with a museum and library for the use of members of the medical profession throughout the Province—a purpose which seems hardly necessary when other pressing needs are considered. It had a balance in the bank on June 16th, 1915, of $24,308.77, and in June, 1916, of $16,134.63, after investing during the year $9,750.00.

These various amounts represent savings, and have largely been derived from examination fees, registration fees, assessment dues, and fines.

The income and expenditure account for 1915-16 is given in the previous pages.

The income for the year 1914-15 was $25,383.52. It may be roughly divided thus:

Balance in Bank, June 30th, 1914		$19,051 45
Asst. dues (from registered members)	$5,182 00	
Registration fees	5,442 00	
Fines	520 00	
Examination fees	12,915 00	
Interest on bonds	1,000 00	
Interest on balance	324 52	
		25,383 52
		$44,434 97

Taking that year's statement as an example, the assessment dues and fines were more than sufficient to pay office salaries, legal expenses, both general and in connection with prosecutions.

The registration fees would more than pay the other expenses of all kinds, including $200 refunded to students, leaving what is derived from the examinations, $12,915.00, and interest on investments to pay the cost of examinations and of the Council and Committee meetings.

The Council meetings (2) cost	$6,062 65
The Committee meetings (6) cost	576 50
The Examinations (2) cost	3,638 50
	$10,277 65

The additional amount unexpended and added to the balance of the previous year was $5,257.32, so that about one-half of that amount was the surplus derived from fees over and above the cost of Council and Committee meetings and examinations. This surplus is actually $2,637.35.

The income and expenditure for 1915-16 may be similarly dealt with:

Balance in Bank, June, 1915		$24,308 77
Asst. dues	$5,062 00	
Registration fees	4,875 00	
Fines	180 00	
Examination fees	11,225 00	
Interest on bonds	1,250 00	
Interest on balance	415 20	
Miscellaneous	8 02	
		23,015 22
		$47,323 99

The assessment dues and fines were, as before, sufficient to pay office salaries and legal expenses, both general and in connection with prosecutions. The registration fees would pay the other expenses of all kinds, except a honorarium of $750 voted to Dr. Bray upon his retirement from office. This would leave what was derived from examinations, $11,225.00, and interest on investments to pay the cost of examinations and of the Council and Committee meetings.

The Council meeting cost	$3,894 45
The Committee meetings cost	1,422 68
The examinations cost	3,527 35
	$8,824 48

The amount added to the surplus for last year was $11,275.86, of which $9,750.00 was invested in War bonds. In addition $2,000.00 was generously contributed to "Relief Belgian, Medical and Pharmaceutical Professions."

In 1906-07 the examination fees received were $15,260.00, and the examinations cost $5,882.40. The registration fees and assessment dues were $8,115.00, and the amount paid to members of the Council was $4,482.40.

In 1910-11 the examination fees received were $12,150.00, and the examinations cost $7,653.34. The registration fees and assessment dues were $7,227.00, and the amount paid to members of the Council was $4,656.40.

In 1911-12 the examination fees received were $6,280.00, and the examinations cost $4,900.20. The registration fees and assessment dues were $9,235.00, and the amount paid to members of the Council was $4,118.10.

In 1912-13 the examination fees received were $7,820.00, and the examinations cost $3,498.52. The registration and assessment dues were $7,360.00, and the amount paid to members of the Council was $4,385.40.

In 1913-14 the examination fees received were $10,320.00, and the examinations cost $3,068.49. The registration fees and assessment dues were $11,004.00, and the amount paid to members of the Council was $4,166.30.

In 1914-15 the examination fees received were $12,715.00, and the examinations cost $3,638.50. The registration fees and assessment dues were $10,624.00, and the amount paid to members of the Council was $6,533.65.

Taking the five years, 1910-11, 1911-12, 1912-13, 1913-14, and 1914-15, the examination fees received show an increase over the cost of the examinations of no less than $25,525.95, or an average of $5,105.19 yearly.

In the same years the registration fees and assessment dues show receipts amounting to $45,450.00, and there was paid to members of the Council $23,859.85, an average of $4,771.97 per annum.

Under The Medical Act the College of Physicians and Surgeons has the right to fix the fees to be paid. These fees are derived from the students, and if they

were returned to them in the shape of education not much objection could be taken to them.

When the amounts allowed for Council and Committee meetings are looked at, they seem to be susceptible of much reduction. The Council consists of twenty-nine members, and there were two meetings in 1914-15, one lasting two days and one four days, attended by twenty-eight and twenty-seven members, respectively. Each member got, apart from travelling expenses at 5c. a mile, fifty dollars for the one-day meeting, as well as an allowance for time spent in travelling averaging $21.00 apiece. At the four-day meeting each member got $100, and an allowance for time spent in travelling also averaging $21.00. The total thus expended, added to the salaries of the staff, makes a very high cost of operating the society, i.e., $12,069.15 in 1914-15, or fifty per cent. of the annual income, and this proportion is similar to that in 1906-07 and 1912-13, and following years. In 1915-16 the amounts paid to members of the Council for Council and Committee meetings was $4,384.50, and for travelling expenses $1,912.63.

Those among whom these heavy expenditures are distributed are members of a great profession, are engaged in its practice, and owe their election to their fellows. They ought to esteem it an honour to represent their profession in guarding the entrance to it and fixing its standard of education.

Another similar body, thirty in number, the Benchers of the Law Society, who have charge of the whole professional education of law students and of their examinations, serve for no emolument and are content to give their time and strength to that end in convocation and numerous committee meetings. Indeed, I am not aware of any other body occupying a similar position in relation to education that does not adopt the same attitude.

Is it not possible for the Medical Council to do in like manner? It would set free a large amount of money for the purpose which alone justifies the exaction of fees from students, i.e., their advancement and education. I make no criticism as to the expenses of the College of Physicians and Surgeons, except in this one direction, namely, the amounts paid to the members of its Council. The total of these payments ought in fairness to be expended through the universities for the benefit of the student body in various ways as needs arise.

It may be noted that although there are over 4,800 members registered by the College, the annual membership dues, which are fixed at the absurdly low figure of $2.00 annually, have only produced in the years 1910 to 1915 an average of $5,103 per year, instead of $9,600. There are thousands of dollars, according to the Registrar, which are practically uncollectible, owing to the fact that some live beyond the provincial boundaries, and others who, although resident here, cannot be collected from except at a cost greatly in excess of the amount owing.

This hardly explains why nearly one half of the members do not contribute their annual fee, though it may indicate why arrears accumulate.

I find that the ordinary and normal expenses of the College for 1915-16, including travelling expenses for members, salaries, legal expenses, printing, telephone, attendance at Royal Commission sittings and copy of evidence thereat, multigraph machine, audit, supplies, building vault, and maintenance of building, miscellaneous and cost of collections and refunds of fees amount to $10,864.83. This excludes such items as two honoraria to retiring officials, amounting to $900.00, $2,000.00 to Belgian Relief, Medical and Pharmaceutical Professions, as well as $9,750.00 investments in war bonds, nor does it include payment to members for Council and Committee meetings, amounting to $4,384.50.

The income for the same period, including assessment dues, registration fees, fines, miscellaneous, and interest on investments, amounted to $11,790.22.

The examination fees brought in $11,225.00, and there was paid out for the expenses thereof, including printing the examination papers, $4,100.03.

It is really from this source that the surplus comes, and my recommendation will be that the net amount received over cost of the examinations be paid over to the universities in proportion to their yearly number of candidates.

This will not be unfair to the College, which now has its home paid for, and an invested surplus of $35,000.00, and (at the end of June, 1916) $16,134.63 in cash in the bank.

It is always possible to raise the annual fee, and this should be done if the College needs any additional income, and provision should be made requiring registration to cease unless it is paid. This may need legislation.

The size of the Ontario Medical Council is unduly large, and its composition peculiar.

It has eighteen territorial representatives, six collegiate representatives, and five homeopathic representatives.

It has itself recommended the reduction of the eighteen territorial representatives to ten, but that number is large enough to suggest itself as the total number.

Territorialism is quite unnecessary. If the profession elects at large, the inevitable result is sure to be that the most outstanding practitioners, with here and there the representative of some one or more localities, will be elected. To make locality instead of eminence the qualification for election to represent a learned and scientific profession is reactionary.

The collegiate representatives sit for three faculties, each teaching medicine, and for three universities and colleges, two of which are now merged into Toronto, and one is non-existent.

I regard the participation of the universities as most beneficial, if not entirely necessary in the composition of a body which fixes the course of study as well as conducts the examinations.

The domestic relations of Victoria University, Trinity University and the University of Toronto in the present federation ought to be regarded.

So long as the present status obtains, those who are chosen to represent the affiliated universities should be regarded on the Council as representing the University of Toronto.

The homeopathic members are five in number. This seems an undue proportion for this school of medicine. They have only three members on the Canada Medical Council, which embraces the whole Dominion. There are only sixty-one homeopaths registered, of whom only forty-five are practising. If regard is had to the relation which this total bears to the whole registered profession, one member would seem to be sufficient.

It appears that in the past eight years there have been only eight candidates at the homeopathic examinations. Statistics seem to bear out the contention that homeopathy is dying out. In 1907 in Great Britain and Ireland there were but 193 registered homeopaths out of a total registry of 35,154.

Having regard to the foregoing considerations, my recommendation would be that the Council consist of fifteen, of whom six, as at present, should represent the universities, one the homeopaths, and the remaining eight should be elected by the profession at large as with the legal profession, and should be those receiving the largest number of votes, excluding, of course, any who might have been nominated by the universities or the homeopaths.

In addition, the representation of other universities which might in the future establish medical faculties should be put upon such a footing that until the equipment and standards are approved by the Council or by the Lieutenant-Governor in Council the right to a place on the Council would not arise.

Legislation would be necessary to secure these reforms, and it should be by definite enactment regulating the present Council, and also those incorporated bodies which at present have larger rights than they would be possessed of when these modifications became operative.

MEDICAL, SURGICAL AND DENTAL FEES.

There has been brought to my attention the fact that, except by a lawsuit, there is no way, in the absence of agreement, in which fees for these services can be determined if the parties differ.

It is a peculiarly unpleasant way of settling the matter, for no one desires to have his physical disabilities exposed to the public gaze, or even to a judge and jury, and reported in the newspapers. It is also objectionable in that the party who has generally to pay is the one who was perhaps incapacitated, or at all events, is likely to have been on an unequal footing with the medical man, surgeon or dentist. More than that, there is a very prevalent notion, whether well or ill-founded, that the charges are based not upon the value of the service, but upon the wealth of the patient. It is, of course, impossible to put a value upon any of these services if regard is had to what is or may be at stake, but notwithstanding that fact, there ought to be some less public method of settling a dispute which may involve the revelation of those intimate details which both parties are anxious to suppress, the professional man just as well as the patient. There is also an apprehension that surgery is too often resorted to where it is not strictly necessary; is, in fact, the vogue. If this be true, as to which I can express no opinion, the only preventive lies in some restriction upon the amount to be paid for the operation and the fixing of that amount after the event with due regard to the necessity of the operation and the professional skill required and the danger involved. Surgery is only a method of treatment, just as medicine and manipulation, and should be so regarded.

I am afraid that a prohibition against operations of major surgery being performed by anyone who has not practised as a surgeon for a certain number of years would not be effectual to reduce unnecessary operations.

I may note that Dr. Wishart mentioned that at one time there was an outcry against the "massacre of the tonsil," due to the fact that a number of the regular medical practitioners calling themselves specialists, but without proper training, had ruined the voices of their patients by that particular operation.

I may, however, give the very recent views of a very eminent surgeon, Dr. A. D. Bevan, of Chicago, who made a statement before me as Commissioner on the general question. His views are embodied in a paper read before the Surgical Section at the Sixty-eighth Annual Session of the American Medical Association in New York, June, 1917, and are, in short, as follows:

"I desire to present briefly an outline of a problem which I believe confronts the medical profession and which demands careful investigation and action. I refer to the problem of bad surgical therapy, of unnecessary surgical operations and of incompetent surgeons. In my work as chairman of the Council of Medical Education, and in my position as teacher of surgery and as attending surgeon in

a teaching hospital, I have, during the last ten years, been much impressed with the fact that there does exist this definite problem which the American medical profession should face. . . .

"In the last fifteen or twenty years the practice of medicine has become more and more surgical, new surgical fields, one after the other, have been explored and carefully cultivated, and new operative procedures have been developed and perfected. . . .

"The amount of surgical operating has increased manyfold and will continue to increase because there are thousands of people who still lack the benefits that could be given to them by modern surgical therapy. This great increase in surgical operations and operating surgeons has brought with it this new problem of unnecessary operations and of incompetent surgeons. . . .

"Those who are in touch actively with surgical therapy, who see a large number of surgical cases and who come in contact with a large number of men doing surgical operations, cannot but be impressed with the fact that there is a certain considerable number of operations being performed in this country that are unnecessary and unwarranted, and that there is a considerable number of men operating who are not qualified to do the work. . . .

"My impression is that this condition is due to three causes—ignorance, dishonesty and bad judgment, sometimes bad judgment amounting almost to an obsession. . . .

"What shall be done by the medical profession about the unnecessary and unwarranted surgical operations done as a result of ignorance in unattached and uncontrolled hospitals by poorly trained men? What shall be done about the unnecessary operations done by dishonest men for a fee; the unnecessary appendix operations done for imaginary appendicitis; the unnecessary fixations of the kidney; the unnecessary amputations of the breast done for benign or imaginary breast tumors; the unnecessary operations on female genitals, on the tonsils, on the gall-bladder, etc.? What shall be done about the operations that are due to lack of good judgment or to misguided enthusiasm; the unnecessary operations on fractures; the fantastic operations for intestinal stasis without gross pathology; operations for supposed insufficiency of the ileocecal valve based on misinterpreted Roentgen evidence, intestinal anastomosis, or resections of the large intestine for the cure of epilepsy? These are problems which we should meet frankly, investigate fully and find means to correct. . . .

"This problem of unnecessary operations and incompetent surgeons is a serious matter both for the medical profession and for the public. Its existence should be frankly admitted, and steps taken by and within the profession to reduce bad surgical therapy to a minimum. . . .

"There are at least two large problems involved in this whole matter, (1) that of unnecessary and unwarranted operations, and (2) that of operations done by incompetent men.

"1. In a general way it is evident that one of the best means of combating the evil of unnecessary and unwarranted operations is that of attacking surgical problems as pieces of clinical research, not from a single point of view and not by a single man, but as pieces of joint study from the point of view of the several specialists whose fields are involved in the problem and who may be of service in finding the right solution. Let us say, as an example, the study of so-called intestinal stasis and its surgical therapy. This should be a joint study by the internist, the neurologist, the physiologist, the pathologist, the roentgenologist and

the surgeon, and when this is done by a competent group of men there will be little danger of going off on a tangent, and arriving at erroneous conclusions.

"2. The problem of operations done by incompetent men is largely an educational, and in a sense also a moral question. . . .

"We need in solving a great problem of this kind the support of the entire profession, and that can be obtained only from the organized medical profession, which is the American Medical Association."

I have not received much assistance from either of the professions concerned. Both oppose any appointment of an officer charged with this duty, and both represent that the fixing of any uniform tariff is impossible owing to the differences necessarily arising from temperament, the exact progress of any disease and other conditions of the moment which naturally occur to anyone reflecting upon the services which have to be rendered.

In this last opinion I concur. But I am quite convinced that the appointment of a thoroughly competent man of experience and judgment would be of the greatest benefit to both the public and the professions, having regard to the considerations I have mentioned. This appointment should be made by the Provincial Government, after consultation with the College of Physicians and Surgeons and the Royal Dental College, respectively, and if possible with their concurrence. The duties should involve the taking of evidence after due notice to the parties and the fixing of the fee. It would be unwise to make this determination wholly final, but it should afford *prima facie* evidence of a reasonable fee in case it is disputed, subject to the leave being obtained summarily from a Judge or Court, whose jurisdiction would be determined by the amount claimed in one case or fixed in the other, to litigate the question. If leave is so given, then the onus should be upon the party disputing to convince the judge at the trial that it was either too high or too low.

This provision would reduce litigation to a minimum, and yet would preserve the right of either party to resort to the Court if desired.

APPOINTMENT OF MEDICAL DIRECTOR.

I think it would be decidedly in the interest of the public if the Government would attach to the Department of Education a physician of experience to advise them and to direct attention to matters that will be urgent very shortly, as well as those which are now pressing.

The relation of the military establishments in medical practice and education, and their proper relation to provincial hospitals, will, during and after the war require some intelligent handling when their size and number are considered, especially when the demobilized soldiers are evacuated into civil life. Their reconstitution into Provincial institutions fitted for the then medical wants may be prudent, but the process will need thought and skill. In addition to this the tremendous impetus to all kinds of physical therapy, the pressing need for its employment and the liberation of thousands of those skilled in administering it in various forms will be such as to require someone to devote his time and strength to the initiation and development of this branch of healing and the providing of centres sufficient in numbers and wisely distributed.

There are as well many things which have come before me, such as the advertising of remedies, the prevalence of venereal diseases, and others, some of which

were not within the scope of my Commission, many of which ought to be put under the control of someone not affiliated either with the universities, nor with the hospitals, colleges or Medical Council.

I refer to the consideration from time to time of the standards maintained by the universities and councils, both for premedical and medical education, the preliminary and final examinations both of the universities and the colleges and their conduct, as well as the very important questions now looming up, i.e., the proper place of the Dominion Medical Council and its examinations in regard to licensing in each province and the necessity for some rule of reciprocity between the provinces and outside the Dominion which would not be productive of hardship in instances where strictness would be misplaced.

In addition to this, the consent of such an officer should be required before prosecutions under The Medical Act are begun, and he should have the right independently to direct them where necessary. The standardizing of the education of nurses and the arrangements for the inter-relation of the various training schools, as well as registration and the evolving and encouragement of some scheme for local and instructed nursing such as is in vogue in Detroit would occupy much time if properly handled. There is as well the real need for someone who would be, in effect, a protection both to the public and the professions against excessive charges and particularly that branch of that question to which I have alluded, the elimination or reduction of unnecessary and costly operations. I know of no way in which that can be dealt with except by providing that if an operation is unnecessarily performed, or the charge is said to be excessive, the circumstances surrounding it can be reviewed by such an officer if anyone chooses to complain. If it is said that no excessive fees are charged, nor any unnecessary operations are performed, then the fact that such a tribunal exists can do no harm to the profession, and its existence, if not resorted to, will be the best evidence that conditions in this respect are sound.

If a profession enjoys a virtual, though perhaps an inevitable monopoly, by reason of the stern requirements of a scientific education both as to time and study, as the medical profession does, the public interest requires, in my judgment, some professional authority to whom the public might appeal against any evil to which exclusive rights might give rise. In addition to this, the profession requires to be protected against itself, against sloth and inefficiency in the conduct of its preparation, as well as in its practice, and against inability or unwillingness to receive or try new ideas or new methods. Anyone with the true spirit of modern education and acquainted with modern medicine could, in such a position of authority, be of immense service, not only to the Government and public, but to the profession as well.

SO-CALLED COLLEGES.

I have examined into the affairs of several so-called colleges of chiropractic, manotherapy, science, optics, etc. The details concerning each one will be found beginning at page 537-565.

I regard it as very detrimental to the cause of medical education that these institutions—generally only a business name for an individual or a one-man company if incorporated—should be permitted to do any business under a name calculated to mislead the public as to the qualifications and real purpose of those concerned.

Only a few of these concerns operating in Ontario have come under my direct notice, but enough has been shown to indicate that they are merely profit earning private enterprises with neither space, equipment nor teaching staff worthy of the name.

Legislation is urgently needed to stamp out the use of any name that will indicate that collegiate work or instruction in medicine or any medical or manipulative method or any so-called science, either of medicine, optics, or otherwise within the sphere of the healing art, is being taught. Those incorporated should have their privileges withdrawn at once, and it should be made an offence for any one or more, except under proper regulations, if such should be needed, to use the name college or any similar name in connection with his business or profession, if that is in any way allied to medicine or the healing or alleviating of disease or pain.

STATUTORY CHANGES.

All parties that have appeared before me have expressed a desire that the word "medicine" or "practice of medicine" should be defined by statute.

The latter can and should be dealt with, but its scope evidently will depend upon how far the recommendations in this report are adopted.

If they are accepted, then the definition of the "practice of medicine" may be couched in the words following and subject to such modification as will exclude from it the exercise of the tenets of any religion or any practice not properly within it, such as massage under the direction of a regularly qualified physician, or the fitting of glasses by mechanical means or aid given in an emergency.

"The term 'practice of medicine' shall mean and include:

"(1) The use of any science, plan, method, system, or treatment with or without the use of drugs or appliances for diagnosing, alleviating, treating, curing, prescribing or operating for any human disorder, illness, disease, ailment, pain, wound, infirmity, injury, defect or deformity or physical or mental condition.

"(2) Diagnosing, alleviating, treating, curing, prescribing or operating for any human disorder, illness, disease, ailment, pain, wound, infirmity, injury, defect or deformity or physical or mental condition, and the holding out, offering or undertaking by any means or method to do any of the foregoing and including midwifery and the administration of anæsthetics.

"(3) Any manipulative or other kind of physical or mental treatment whatsoever, suggested, prescribed or advised, for body or mind, administered to, operated upon, or intended to be followed by the patient himself or herself, intended or professing immediately or ultimately to benefit the patient, and the holding out, offering or undertaking by any means or method to use the same or to diagnose.

"Any person who shall habitually use in advertising any title such as M.D., M.B., D.O., D.C., D.O.S., or any title as indicated thereby or as surgeon, doctor, physician, healer, professor, specialist or any other letters, sign or appellation having the same or similar import in relation to medicine as defined above, shall be considered *prima facie* as practising medicine. Those possessing the degree of doctor of dental surgery, or being licentiates of dental surgery, shall not be within the above provision."

The College of Physicians and Surgeons should also have the right to suspend practitioners in addition to their present powers, and Section 31 of The Ontario Medical Act should be amended so as to make provision therefor.

That section should have added to it a sub-section which would render impossible the position in which one practitioner found himself, of being acquitted on a criminal charge and yet being liable to be disciplined under that section for the same acts which warranted his acquittal.

I suggest the following:

(5) Where any registered medical practitioner has been charged with any offence which involves guilt or infamous or disgraceful conduct in a professional respect and is acquitted by any court of competent jurisdiction after trial upon the merits his acquittal shall be a bar to any proceedings against such practitioner under this Act upon the ground that he was in fact guilty of the offence of which he has been acquitted or that by reason of the facts and circumstances connected therewith he has been guilty of infamous or disgraceful conduct in a professional respect.

There are also some necessary changes in the statute law called for in case my recommendations are adopted, notably as to the composition of the Medical Council, the status of the university representatives thereon, the disqualification as voters of those who have not paid their annual dues, as well as the forfeiture of their registration, the curtailing of rights to representation thereon, unless upon terms different from those at present obtaining, the appointment of a medical officer attached to the Department of Education, with the powers and duties necessary for the purposes mentioned, and the enactment of such legislation as will reserve ultimately to the Lieutenant-Governor in Council the right to approve or disapprove of any regulations made or fees fixed by the College of Physicians and Surgeons, by the Royal College of Dental Surgeons, or by nurses, or any association thereof.

MIDWIVES.

Having regard to the statements made before me and to my inquiries into the matter, I do not at present recommend any changes in the Act respecting midwives. There has been passed in Great Britain, applicable to Scotland, a most comprehensive Act upon the subject, 5 and 6 Geo. V. c. 91 (1915), to which attention may be given if the subject assumes an aspect calling for legislative action.

HOMEOPATHY.

I have noted elsewhere the gradual decrease in the number of homeopathic practitioners and students.

Under the present Medical Act certain privileges are granted which have been amplified by the regulations of the College of Physicians and Surgeons.

The statutory provision is as follows: (R.S.O. 1914, Chap. 161, Sec. 27.) "A candidate who, at the time of his examination, signifies his wish to be registered as a Homeopathic Practitioner, shall not be required to pass an examination in either Materia Medica, or Therapeutics, or in the theory or practice of Physics, or in Surgery or Midwifery, except the operative practical parts thereof, before any examiners other than those approved of by the representatives in the Council of the Homeopathic System."

The regulations passed in apparent pursuance of that provision are:

"Candidates wishing to be registered as Homeopathists must conform with the requirements regarding matriculation as found in Section 1.

"Such candidates must also have complied with the full curriculum of studies prescribed from time to time by the Council for all medical students, but the full time of attendance upon lectures and hospitals required by the curriculum of the Council may be spent in such Homeopathic Medical Colleges in the United States or Europe as may be recognized by a majority of the Homeopathic members of the Council, and when such teaching body has been established in Ontario, it shall be optional for such candidates to pursue in part or in full the required curriculum in Ontario.

"Candidates who intend to be examined by the Homeopathic Examiners shall signify their intention to the Registrar at least two weeks previous to the announcement of the examinations, due notice of which must be given to examiner by Registrar. Homeopathic students are to be examined by examiners approved by a majority of the Homeopathic members of the Council.

"The questions of the Examiners in Homeopathic subjects will be handed, at the beginning of the general examination on the same subject, by the Registrar or deputy, to such candidates as shall have given him notice in accordance with Section III, sub-sec. 7.

"They shall write the answers to these questions in the same hall with the other candidates, and hand their papers, when finished, to the Registrar, in the same manner as provided for other candidates, to be by him given for examination to the Homeopathic members of the Board of Examiners appointed to examine on that subject."

I am dealing elsewhere in this report with the representation of homeopaths upon the Ontario Medical Council, and with their favoured portion as contrasted with graduates of leading American universities.

Having regard to the fact that for fifty years no attempt has been made to give homeopathic medical institutions any shape or form in Ontario, that we are wholly dependent upon the output of colleges in the United States, over which the Province has no control, of whose standing we have no information, and of the undeniable fact that homeopathy is failing to justify itself and is receding in numbers and enthusiasm—I think the continuance of its position is open to all the objections that can be urged against the admission of osteopaths.

According to Dr. Campbell, homeopathy has no organization except a voluntary society which meets once a year, but keeps no record of numbers. There are sixty-one practitioners registered as homeopaths, of whom forty-five are in practice, and about a dozen to fifteen were present at the last annual meeting. From 1912 to 1916 only 3 candidates passed the examination for license as against 633 regular medical students. Two out of the three had their education and training in the United States.

The dwindling of homeopathy is shown in the report of the American Medical Association for 1915 with regard to its colleges and graduates in the United States. In that year (ending June 30th, 1916) the student attendance at homeopathic colleges was 638, as against 13,121 in the ordinary medical schools. In 1900 it had stood at 1,909, as against 22,710 in the ordinary medical schools. This shows a decrease of 66 per cent. The number of graduates has fallen from 413 in 1900 to 166 in 1916, i.e., a decrease of 60 per cent. The homeopathic medical colleges numbered 22 in 1900, and in 1916 there were only 10.

In February, 1914, Dr. Copeland, Dean of the New York Homeopathic College, said:

"A man's career in medicine in no sense depends upon the quality or quantity of instruction he had before he entered medical school. I want to see homeopathy prosper in this country, and instead I see it rapidly declining, largely because we have not any men to send out into the world. I am not going to be a party to this calamity. We need practitioners of homeopathy, and to get them we must have students in our colleges."

In the report of the Carnegie Foundation of October, 1914, Dr. Henry S. Pritchett makes the following comment:

"The great contribution which Hahnemann and his followers made lay in breaking down the existing school of medicine, and in showing its subserviency to the medical dogmas of the past. While Hahnemann's theory was a dogma, its practical application showed that the prevalent system of dosing, following the precepts of revered teachers, was absurd and harmful; that men recovered just as well or better from smaller doses; that good nursing had more to do with recovery than either the small or the large dose. To-day we recognize that the sick recover in many cases without any dose. Dosing plays a decreasing role. The scientific physician of to-day does not give one prescription where he gave five twenty years ago. He will not hesitate to use what is called a homeopathic remedy whenever it proves effective. The great contribution of homeopathy seems to the scientific man to have been its influence upon the development of modern medicine. About the time that it gained a foothold in Europe the great scientific discoveries of the last half of the nineteenth century began, and with them the new conception of medicine as a science. Untrammelled by dogma, or preconceived theory, this conception of medicine completely displaced in Germany the various sectarian contending medical factions that had existed. Homeopathy was one of these divisions. It has served a large purpose, but that purpose seems in the main to have been accomplished.

"For these reasons, also, the man trained in inductive science cannot escape the conclusion that homeopathy in this country will in the long run lose itself—just as allopathy has lost itself—in scientific medicine. In Germany, the home of homeopathy, it has practically disappeared. With no discrimination against it, with the simple requirement that any man who wishes to call himself a homeopath must take the full scientific training of all other physicians, the numbers have steadily diminished. There are to-day only about 250 homeopaths among the 32,000 practising physicians of Germany. The same thing has happened in England, where homeopathy, introduced in 1826, has now declined to a point where some 250 physicians and a few hospitals represent the homeopathic movement."

Mr. Flexner, in his statement before me, said:

"Homeopathy at one time threatened to be a formidable thing in this country. It is now practically dead; the steady pressure brought to bear on homeopathic schools has forced them to the same level educationally as the other schools."

And speaking of the homeopathic schools of Minnesota and Michigan, he said it was a common experience for men who failed to get into a regular school to go to the homeopathic department. But when the homeopathic department was put on the same basis as the regular department that source of recruiting was stopped; they died out.

In connection with the homeopathic representation on the Council, I note a curious anomaly as to their powers, which affects their student body.

Under The Ontario Medical Act, Section 29, a homeopath need not be examined in materia medica or therapeutics or in the theory or practice of physics or in surgery or midwifery, except the operative practical parts thereof.

This is clear enough, but in the regulations of the College of Physicians and Surgeons it appears that the attendance of homeopathic students may be spent in such homeopathic medical colleges, *in the United States and Europe,* as may be recognized by a majority of the homeopathic members of the Council. In this way the standards and standing of the homeopathic colleges in the United States and elsewhere are left entirely in the hands of three out of five of the homeopathic members of the Council, whereas in all other cases the Council as a whole takes the like responsibility.

Manifestly, this is improper. The position and ability of the homeopathic colleges is a matter of concern to the public, unless it can be said that the decrease in numbers is so great as to make it negligible.

CONCLUSION.

In conclusion I wish to express my thanks to those gentlemen both in the United States and here, who, not being directly interested in the result of my inquiry, yet placed themselves at my disposal and gave me much varied and important information.

I should like to direct particular attention to the views expressed by the following gentlemen and ladies, either because the topic was of great interest or the opinion original and thoughtful:

Alex. Fleisher, Supervisor Welfare Department, Metropolitan Life Insurance Co., New York.

Dr. Walter Eyre Lambert, Chief Surgeon, Eye and Ear Infirmary, New York.

Miss Nutting, Professor of Department of Nursing and Health, Teachers' College, Columbia University, New York.

Miss Goodrich, Assistant Professor of Department of Nursing and Health, Teachers College, Columbia University, New York.

Dr. Chiles, President, American Osteopathic Association, Orange, N.J.

Dr. Emerson, Commissioner, Department of Health, New York.

Miss Crandall, Executive Secretary, Organization of Public Health Nurses, New York.

Dr. Flack, Dean, Philadelphia College of Osteopathy.

J. M. Baldy, M.D., President, Bureau Medical Education and Medical Licensure, Philadelphia.

The members of the Medical Faculties of McGill and Laval Universities, Montreal.

Dr. R. W. Powell, Registrar, Canada Medical Council, Ottawa.

Dr. Downing (Albany) Assistant Commissioner Higher Education, New York State.

Dr. Briggs, Commissioner, New York State Department of Health.

Dr. Lambert, Dean, Medical Faculty, Columbia University, New York.

Mr. A. Flexner, Assistant Secretary, General Education Board, Carnegie Foundation, New York.

Dr. Colwell, Secretary, Council Medical Education of American Medical Association, Chicago, Ill.

Dr. Drake, Secretary, State Board of Health, Chicago, Ill.
Dr. Bevan, Chairman, Council of Medical Education, American Medical Association, Chicago, Ill.
Dr. E. R. Proctor, President, Chicago College of Osteopathy, Chicago, Ill.
Dr. Mills, Assistant Dean, Chicago College of Osteopathy, Chicago, Ill.
Col. McCullough, Chairman, Provincial Board of Health, Toronto.
Dr. Hastings, M.O.H., Toronto and his staff.
Surgeon-Colonel E. Stanley Ryerson, Toronto, C.A.M.C.
Samuel Price, Esq., Chairman, Workmen's Compensation Board.
Dr. Matson, Secretary, Ohio State Medical Board, Columbus, O.
Dr. Hulett, Osteopathic Examining Board, Columbus, Ohio.
Dr. Chas. Sheard, Professor of Physics, Ohio State University, Columbus, Ohio.
Capt. Tait McKenzie, R.A.M.C., Professor of Physics, University of Pennsylvania, Philadelphia.
Prof. L. F. Barker, Johns Hopkins University, Baltimore, Md.
Dr. Henry S. Pritchett, President, Carnegie Foundation for the Advancement of Education.
Surgeon-General Fotheringham, C.A.M.C., Ottawa.
Surgeon-General G. C. Jones, C.A.M.C., Ottawa.
Surgeon-Colonel I. H. Cameron, C.A.M.C., Toronto
Professor J. C. McLennan, Toronto University.
Miss Carson, Superintendent, Detroit Home Nursing Association, Detroit, Mich.
Capt. E. Ryan, C.A.M.C., Toronto.
Mr. Albert Myer, Secretary, American Optical Association, Albert Lea, Minn.
Dr. W. Banks Meacham, President, American Osteopathic Association, Ashville, N.C.

In specifying the foregoing, I do not in the least detract from the ability with which those interested presented the arguments on the side they supported. I take it for granted these will be studied, but the other matters not being so directly controversial might otherwise be overlooked.

Attention might be called to the very able presentation of the case of the regular medical profession by Dr. John Ferguson, on May 11th, 1917, and the answers thereto by the gentlemen representing each opposing interest made on the 29th of June, 1917, as well as the statements by Dean Connell, Dr. W. T. Connell and Dr. Third of Queen's University, on April 10th-11th, 1916.

I have received every assistance from the heads and staff of the three universities, from the College of Physicians and Surgeons, and indeed from all I have had occasion to call before me.

Mr. Walter L. Breckell, C.S.R., who has taken down the statements of those who appeared before the Commission, has performed this service with unusual accuracy and rapidity.

I beg to make the following recommendations:

(1) The establishment, without delay, of an institution of physical therapy upon the grounds of the Toronto General Hospital, or nearby, in which the latest methods of hydrotherapy, electrotherapy, X-ray, manotherapy, massage, and other forms of manipulative cure will be assembled and put into use with an experienced staff, and adequate modern equipment, each department being installed in proper relation to the other, so that returned soldiers and civilians may be able to take cures prescribed by those in charge based upon the recent advance in knowledge in this department of medicine. This institution to be followed by others, if possible, in

London and Kingston. Neither the building nor the equipment need be expensive. The real need is such a structure as I have referred to in the Supporting Statement "A," somewhat enlarged and so fitted up that all forms of physical therapy can be had under the same roof and as part of a combined cure.

(2) The selection of the staff from those having special training in the department to which they are appointed, and with recent experience in England, France or Belgium, or elsewhere at the front, in the special methods of cure and re-education of limbs. The head of this institution should be a university professor, and should be of such standing and authority that his investigations into and conclusions upon these methods, as well as into osteopathy, chiropractic, etc., would be generally accepted.

(3) The installation in the Department of Physics in Toronto University, coupled with professional instruction of the sort just indicated, of sufficient modern equipment in physical therapy as above mentioned to permit not only proper instruction to be given to students but to graduates in the most necessary and useful methods in this respect, and to encourage and stimulate research and improvement in this direction.

(4) Provision for such a compulsory course for medical students during their training, in physical therapy, both theoretical and practical, as will result in turning out graduates really qualified in that department. To this should be added a post-graduate course so as to enable those already practising to acquire complete facility in this branch of therapy. This course should be so arranged as to provide that rapid progress can be made so that the immediate wants may be met during and at the conclusion of the war.

(5) That Medicine or the Practice of Medicine should be defined by legislation somewhat in the terms stated in the report, and that the powers of discipline possessed by the College of Physicians and Surgeons should be amended as stated in the report.

(6) That Osteopaths, Chiropractors and other drugless physicians practising in this Province on the 30th day of June, 1913, be permitted to continue for six months from the 1st of January, 1918, without being subject to any disability or prosecution.

(7) That after the 1st of July, 1918, no one shall practise medicine as defined as aforesaid in this Province without a license from the College of Physicians and Surgeons of Ontario, except that those who were practising what is known as Osteopathy on the 30th of June, 1913, if possessed of a diploma from one of the five colleges now recognized by the American Osteopathic Association, with five years' practice in Osteopathy, or if they obtain from that Association a certificate that they are qualified to pass the examination for license in the state where Osteopaths are examined and licensed which has the highest standard, may continue in practice under a special license to be issued by the Minister of Education in which the practice of the holder shall be limited to osteopathy and as not including the administration of drugs nor the performance of surgery with instruments.

(8) That provision be made in such legislation that nothing in it or in the definition of Medicine shall prevent the practice of the religious tenets of any church, provided that anyone exercising it for gain for the benefit of the sick or diseased shall possess a permit from the Provincial Board of Health certifying that the holder is qualified to recognize diseases required to be reported under The Public Health Act, and further providing that when the practice is apart from

a church edifice or the home of the patient, and is for gain, the onus shall be upon the person so practising to bring himself within the exception. Nothing in the legislation should in any way weaken the position that where infants are concerned necessaries should include the services of a registered medical practitioner.

(9) That a course be arranged by the faculties of medicine in the universities, the Optometrical Association and the Toronto Technical School, such course to be approved by the Minister of Education, for the education of students in optometry as the word is now understood and as outlined in this report. On passing through this course the student shall be entitled to a certificate of fitness and entitled to style himself Optometrist. Those in practice on June 30th, 1913, shall be entitled to a certificate to be granted by a temporary board to be nominated by the Minister of Education, consisting of the President of the Optometrical Association, and a representative from one of the universities, and from the Toronto Technical School, provided the applicant passes such examination as shall be prescribed by such temporary board.

(10) That the word "Registered" in connection with nurses be reserved for those registered by the Provincial Secretary's Department, and that a Provincial Registry be established, with local branches, wherein all nurses may be registered according to qualifications, which may be prescribed by such registry. That all such registered nurses shall be qualified to join any association of nurses in this Province. That no nurse who has not graduated from a nursing school conducted by a public hospital as defined in R.S.O. 1914, or one designated by the Provincial Secretary if situate out of Ontario, shall be entitled to call or advertise herself as a graduate, trained or certified nurse. That the fees and regulations of all organizations of nurses shall be subject to the approval of the Lieutenant-Governor in Council.

(11) That provision be made by statute for the incorporation of Home Nursing Associations to be established by municipalities or private benevolence to provide, under the direction of medical practitioners and under the supervision of a graduate nurse, nurses for the care in their homes of the sick and their families, such nurses being instructed by the association which shall fix their fees and designate the work for which each is fitted, keeping a record of names and addresses.

(12) That the training of nurses, the establishment of further training schools and the affiliation and inter-relation of the various hospital training schools among themselves and with other institutions in which either general or special training schools shall be established, the standardization of the educational requirements, and the professional training of nurses be at once taken up and dealt with.

(13) That there be appointed and attached, preferably to the Department of Education, a medical director whose duties shall be to inspect the equipment of every school, university or college engaged in the teaching of medicine, and the equipment and methods of any hospital in which either medical students or nurses are taught, and to deal with or assist in the settlement or carrying out of the various matters recommended in this report, and particularly to assist in correlating the efforts of this Province in regard to benefiting in a medical way the returned soldier with those of the Dominion Government so that there will be adequate provision made for those to whom Ontario owes its special debt of gratitude without unnecessary duplication after the period of special effort is over, and with such other duties as may be prescribed.

(14) That the Constitution of the Ontario Medical Council shall be remodelled as recommended in the report, and the powers and rights given in the present

Medical Act be altered and amended accordingly. That the regulations and fees to be made and prescribed by the Council be all subject to the approval of the Lieutenant-Governor in Council. That provision be made for the payment over of the net fees from examinations by the College of Physicians and Surgeons and the Royal Dental College in accordance with the Report, and that provision be made for the expending of the same in the interests of medical education through the medical faculties of the universities.

All of which I respectfully submit for your Honour's consideration.

FRANK E. HODGINS.

October 13th, 1917.

SUPPORTING STATEMENT "A."

PHYSICAL THERAPEUTICS.

The war has brought forcibly and immediately before the minds of all the pressing necessity for proper and scientific after-treatment of the wounded soldier. If it had not done so, it is probable that the question would have sooner or later been forced to the front by reason of its own importance, emphasized by the operation of The Workmen's Compensation Act. Under that Act compensation to an injured workman depends upon disability, and may last during his life time. If permanent, it may amount to 55 per cent. of his average weekly earnings during the previous twelve months. If temporary, it runs while the disability continues, and is to be 55 per cent. of his decreased earning power.

In 1916 the Board in Ontario collected from employers $1,999,962 and expended $2,102,025.29 (including claims due in 1915). It reports that in 1915 cheques for an average of $3,600 went out daily to injured and disabled workmen or to their widows and children. This amount will reach a huge total as years go on. The Dominion will pay in pensions generous sums to those gallant men who have been incapacitated in defending us and our land. But the need of assisting in the return to the activities of life of the soldiers incapacitated by disease or wounds brooks no delay, and calls for prompt recognition and action.

I am profoundly convinced by what I have heard and read and seen that there must be a radical change from the accepted view that a man is cured when he is free from fever and pain. He must hereafter be regarded as only half-cured, and the after-treatment should be regarded as being just as essential as the more immediate and instant aid.

It is cheering to know from a humanitarian standpoint, as well as satisfactory from an economic one, that the majority of soldiers shattered or shocked by shell may, if adequate measures are now taken, look forward, after the earlier and more acute treatment has been finished, to practically complete recovery of the use of limbs and muscles, or their re-education for novel employment so as to enable them to move about, work and enjoy life under their altered conditions.

This has been actually accomplished in the Command Camps in Great Britain and in similar institutions in France.

Dr. Tait McKenzie thus describes them:

"These Command Depots afforded welcome relief to various regimental depots and other places overcrowded with men useless from the military standpoint, and of but little use to themselves—men who were rapidly lapsing into complete or partial

invalidism, and whose deterioration from a military standpoint was even greater, under the combined influence of sympathy and freedom from all duty.

"Either two or four thousand men constitute the complement of patients for a Command Depot—a strange assemblage of cases: profound neurasthenia, the result of sleepless nights and arduous days; shock in all its forms—tremulous hands and tongue, stammering speech or deafness, persistent nightmares, and fears by day; disorders of sensation, contractures and paralyses; rapid and weak heart action, hearts that were overstrained and that are unable to sustain the effort of the lightest gymnastic exercise or the shortest march; rheumatism, real and unreal, in all its forms; lungs suffering from the bronchitis of gas poisoning, asthma and even tuberculosis; profound debilities following typhoid, dysentery and malaria, requiring months of good food, light duty and progressive exercise to build them up. Then the wounded—an endless stream—feet and legs pierced by bullets, or pitted by shrapnel, arms and hands with torn nerves and jagged, tender scars; chests still containing bullets or pieces of shell; in fact, no part of the body escapes the awful and sometimes fantastic effects of the ordeal through which it has passed.

"For almost all these cases the treatment comes under what might be called 'physical therapy'—electricity, hydrotherapy, massage, mechanotherapy, corrective exercises, physical training and marching.

"The Almeric-Paget Massage Corps has supplied trained masseuses, one operator being able to treat twenty cases a day, and recently the Corps has been strengthened by the first graduates from St. Dunstan's—four men blinded in action and taught their profession since the beginning of the war. The histories of cases neglected for months, or maltreated by unskilled amateurs, show the imperative necessity for careful training in this most important work.

"Many cases come in with limbs which have become wasted and joints stiffened by long immobility in splints, cases which must be slowly coaxed back to strength and usefulness by skilled massage and manipulation, and other apprehensive patients appear on inspection whose joints have been rendered painful, and in whom freshly formed scar tissue has been torn and inflamed by manipulation which a well trained masseuse would never have undertaken."

I have been able to collect some recent reports of some value upon this subject.

I quote first that dated 24th February, 1917, by the Committee of Council of the Section of Balneology, etc., of the Royal Society of Medicine, in England, which appeared in the *Lancet* on March 3rd, 1917.

Statement and Recommendations on Physical Treatment for Disabled Soldiers, by the Committee of Council of the Section of Balneology and Climatology of the Royal Society of Medicine.

1. "The serious and urgent problem of the physical treatment and training of disabled and discharged soldiers has been a long time under discussion, and it may be hoped is now approaching a solution. The Committee, having devoted more than two years to an investigation of the subject in England and France, feel bound to reassert their profound conviction, already twice urged in reports of the War Office, August 28th, 1915, and February 18th, 1916, that Physical Treatment, so often advocated by them, is now the thing most needed to prevent the formation of an army of cripples in this country. What has been already done here and there only points the way to the much larger aim of the Committee, and that is to provide an adequate and well-ordered system of physical treatment for every disabled soldier throughout the country who needs it, as far as possible before his discharge.

Such physical treatment consists of hydro-therapy, electro-therapy (including radio-therapy), mechanical treatment and massage.

(2) "At the British spas large numbers of wounded have received treatment by waters and baths, although considerable difficulty and delay in obtaining this treatment is sometimes experienced.

"The number of invalids requiring such treatment is likely to increase, and the Committee are of the opinion that the hospital accommodation for soldiers at the spas should be reserved for cases requiring hydrological treatment.

(3) "The Committee are further of opinion that as the importance of systematic methods and records is becoming more and more apparent, the general adoption of one simple system of recording cases is most desirable in order that the records supplied from all centres of physical treatment, whether at spas or attached to hospitals, may admit of exact classification.

(4) "A Clinic for the Physical Treatment of Disabled Officers was opened at 126 Great Portland Street, London, W., in July, 1916, as a result of the efforts of certain members of this Committee. The intention of the promoters of this Clinic was to provide an institution, thoroughly well equipped, which would afford to officers who were patients in the various hospitals in London the combination of the different forms of physical treatment which seemed necessary. Those responsible for it have endeavoured with some success not only to combine the best methods of treatment, but to secure the accurate keeping of measurements and records. It is not a copy of any existing institution, and embodies some new features, such as the 'Whirlpool' and 'Sedative Pool' baths. The Clinic is now financed by the British Red Cross Society, and is called 'The Red Cross Clinic for Physical Treatment of Disabled Officers.' Officers of all the allied nations are treated free of charge under careful and constant medical supervision.

"It is a matter of satisfaction to the Committee that so much excellent work in Physical Treatment is now being done at certain of the Command Depots, Convalescent Camps, Military Hospitals and Red Cross Hospitals. The experience already obtained clearly indicates the possibilities of such treatment when properly applied.

(5) "The vocational re-education of disabled soldiers in the British Islands, so far as it exists at present, has been in many instances carried out without medical supervision, and not associated with any concurrent physical treatment, nor with any systematic measurement of the patient's disability and progress. The Committee cannot regard this as satisfactory. On the other hand, they know that excellent re-educational work under medical supervision has been already accomplished at the Military Orthopædic Hospital at Shepherd's Bush and at certain of the Command Depots.

"The senior Honorary Secretary reports as the result of a visit just had to certain centres for physical treatment and training in France, under both the French and Belgian Governments, that the arrangements for industrial, intellectual and agricultural re-education are being continually extended in that country, and are in every case under medical direction. Essential importance is attached by French experts to the combination of re-education with physical treatment.

"The Committee notice with much interest that these facts have been set forth very clearly by Sir Henry Norman, in his recent report to the War Office on the 'Treatment and Training of Disabled and Discharged Soldiers in France.'

"They would only add that, in their opinion also, physical treatment should in the great majority of cases be provided as an integral part of re-education; and

that the determination of a man's capacity for work ought not to depend on casual observations, but on the results of the periodical measurement of his progress by means of accurate instruments. The very important economic and financial aspects of this matter are outside the province of this Committee."

RECOMMENDATIONS.

(1) "That a service of Physical Treatment consisting of hydrotherapy, electrotherapy (including radiotherapy), mechanical treatment, medical gymnastics and massage, should be made available at the earliest possible date for all soldiers needing it, who are disabled by war.

(2) "That Centres of Physical Treatment, comprising all the above methods, should be established throughout the country on an adequate scale, and wherever possible in association with general hospitals, so that other forms of special treatment and diagnosis may be readily available.

(3) "That at such centres there should be a uniform system of measurements and records.

(4) "That Centres of Re-education and Centres of Physical Treatment should be closely associated.

(5) "That all Centres of Physical Treatment should be under medical direction, with periodical inspection, and that medical men who are experts in the various departments of Physical Treatment should be appointed to the staff.

(6) "That at the Centres first established instruction in methods of Physical Treatment should be provided for the use of medical practitioners, medical students and assistants."

(Sgd.) "WILLIAM GORDON,
"President of the Section.
"SEPTIMUS SUNDERLAND,
"Chairman of the Committee.
"R. FORTESCUE FOX,
"J. CAMPBELL MCCLURE,
"Hon. Secretaries of the Committee.

"February 24th, 1917."

A later report of Dr. J. Campbell McClure, one of the members of that Committee, presented in June, 1917, to the War Disablement Committee of the same section, contains a vast amount of most valuable and interesting information, and will be transmitted with my report. I quote part of it:

Conférence Interalliée pour L'Étude de la Rééducation Professionnalle et des Questions Qui Interessent Les Invalides de la Guerre.

Grand-Palais, Paris, 8th to 12th May, 1917.

"The Congress was opened by the President of the French Republic in the afternoon of Tuesday, 8th May, at 3 p.m. . . .

"The work of this Section was divided into three parts: (a) Physiotherapy and medical-gymnastics; (b) the use of orthopædic apparatus, artificial limbs, splints and the like, and (c) work of various kinds as an adjunct to physical treatment. Section II was devoted entirely to the subject of the professional re-education of the disabled man. In Section III was studied the distribution and employment of disabled men; in Section IV the economic and social problems con-

nected with the disabled man; Section V dealt with the re-education of the blind, the deaf and those crippled by serious nervous lesions; Section VI was devoted to literature and propaganda. . . .

"The work of Section I began on Wednesday, 9th May, at 10 a.m., and Dr. Marneffe, head of the Belgian Military Hospital at Bonsecours, read a long resumé of all the papers already sent in to this Section. This resumé covered the whole question of the physical treatment of the disabled man by medical gymnastics, mechanotherapy, inflation of the collapsed lung after perforating wounds of the chest, electrotherapy, radiotherapy, hydrotherapy and physical training of disabled limbs.

"Certain conclusions were arrived at, which were agreed to after discussion as representing a consensus of opinion of those who took part in the work, but they were somewhat modified at the final meeting of the Congress on the afternoon of 11th May. (I append a translation of the more important of these resolutions as passed at the final meeting.)

"The conclusions arrived at at the first meeting were:

(1) "That surgeons should be urged to send their cases for physical treatment earlier than they at present do, before scars and injuries to joints become too fixed.

(2) "That medical gymnastics should only be practised under the constant direction of properly trained medical men.

(3) "That in order to ensure a proper training of medical men centres of instruction should be established throughout the allied countries for the training of medical men in medical gymnastics and other forms of physical treatment.

(4) "That medical gymnastics should be begun as early as possible in the treatment of injured limbs.

(5) "That where mechanotherapy is given, careful choice should be made of the apparatus to be used.

(6) "That assistants, nurses and orderlies should not be permitted to take part in mechanotherapy without suitable training in physiotherapy.

(7) "That re-educative exercises for disabled limbs should always be directed by a competent medical man with knowledge of the subject.

(8) "That care should be taken in an institute where physiotherapy is practised not to allow professional re-education to take the place of manual work of a purely curative kind. The physical treatment of the disabled man and curative manual labour should be entirely finished before his professional re-education is begun.

(9) "That professional re-education in an institution for physiotherapy should only serve as an adjunct to physical treatment of other kinds, and should be entirely subordinate to them. Also that such manual work should only be employed in treatment after being directly prescribed by a doctor and under his personal supervision.

"These conclusions were not arrived at without some discussion. It was interesting to find that in France and in Belgium, as in this country, those who were devoting themselves to physical treatment were still under the necessity of urging the surgeon to send his cases for such treatment earlier than has been his habit in order to obtain the best possible results in the way of cure. This point cannot be over-emphasized. Many cases are sent to special hospitals and clinics to be treated far too late in the course of their disablement, and there is no doubt that many valuable months are spent on the treatment of cases who have been kept in general hands too long.

"There was a distinct desire on the part of the Belgian Section of the Congress to impress the methods in use in Sweden on all those who practised physical treatment. The British and the French delegates objected to this, especially on the point that all apparatus for mechanotherapy should be strictly according to Zander models. The British and French delegates pointed out that in our various countries other apparatus had already been found to be of service that differed very greatly from Zander models, and it was especially emphasized that all apparatus for mechanotherapy should be so used that the movements were active and not passive. This point was carried at the instigation of the French and British delegates by a large majority.

"The newer varieties of physical treatment described at this Section were the use of radium in the treatment of contracted scars and eczema, and the manipulation bath and pool bath in use at the Red Cross Physical Clinic for Officers, 126 Great Portland Street, London, W. The results of the use of radium in the Grand-Palais Hospital were very striking, and it would appear that further work in this direction might be taken up with advantage. It was interesting to know that under Dr. Kerr, of Liverpool, radium has already been used in this country with considerable success.

"In other respects the delegates were all agreed, very strongly so, on the necessity of having all physical training and treatment under strict medical supervision until such time as the patient is ready to be sent back to the army in some capacity or another, or, if judged unfit for military service, is ready to begin re-education of a purely professional kind.

"Dr. Gourdon, of Bordeaux, gave a very full demonstration of the artificial arms which he has designed both for mechanical and agricultural work. They are extremely simple, effective and moderate in price, consisting as they do mostly of leather, with a steel bar and attachments. With these artificial arms mechanics are able to work freely in a most striking way, and agricultural workers are able to use the scythe, the spade, the wheelbarrow, etc., as well as to carry weights up to 100 kilos. Dr. Gourdon was very emphatic on the point that there was little need to spend much time on the physical re-education of men who had lost a lower limb in whole or in part. Such men, as soon as their artificial limb was comfortably fitted, were able to take up re-education of a purely professional kind. It is, however, otherwise with those who require to be fitted with an artificial arm. Much of the success of the new limb depends upon its being so fitted as to be absolutely suitable for the man's work, and it is only by careful testing of the limb in association with the work that proper results can be obtained. It is Dr. Gourdon's experience that shortly after the limb is adjusted properly a mechanic is able to take up various kinds of mechanical work with great ease, and thereafter his purely professional re-education is very rapid. He emphasizes, however, and apparently with justice, that without the careful preliminary re-education under medical supervision the man is apt to be drafted to his technical school with an unsatisfactory substitute for the limb he has lost.

"It was the general opinion of the British delegates that as far as ordinary artificial limbs went Great Britain was in no way behind her continental allies, but that some attention might be paid to the perfecting of the mechanical and agricultural arm on the lines recommended by Dr. Gourdon, of Bordeaux, and also on the lines of the arms used at the Re-education School at Lyons.

"On the morning of May 10th the third session of Section I was held, at which was discussed the value of work from a curative standpoint, and there was a general

consensus of opinion that such work was of the greatest possible value both in the case of neurasthenics, and those who had sustained injury to some limb, whether it had involved amputation or not. It was held by both the French and British delegates that this work should be considered only as a part of the physical treatment, and should not be in any way re-educative in a professional sense; that is to say, that as soon as a man is found to be unfit for military service, he should not continue his professional re-education in the hospital or command depot where curative work is being employed, but should be immediately drafted to another centre. The reason for this is obvious. When workshops are definitely connected with hospitals and a portion of these workshops is devoted to professional re-education, there is a great danger of two things. Firstly, an enthusiastic medical officer in charge of the workshops is apt to become too keen on what is after all a side line, and men develop in the direction of professional re-education instead of being stopped short either when their curative work has made them fit to return to the army, or when they have shown themselves to be quite unfit for further service. Secondly, the mingling of these two classes is bound to cause dissatisfaction among those who return to the army. This is natural, and is a problem which has to be faced very seriously.

"At this session I described the work of the Canadian Special Hospital at Ramsgate, illustrating the value of curative workshops in connection with physical treatment.

"Section II was devoted entirely to the study of professional re-education. This Section was attended officially by Col. Stanton, of the Statutory Committee, and Major Mitchell, of the Pensions Board, and their report will contain full information on the subjects discussed. One of the most important contributions to this section was Major Mitchell's own, which was extremely good, and of great interest to all the delegates present.

"There are one or two points that I should like to mention in a general way. There is no doubt that re-education in the widest sense of the word should be begun very early in the case of all those who are manifestly unfit for military service, particularly in those cases who have lost a limb. Opinion was unanimous that this work should be begun while the patient is in hospital. What can be done while the patient is still in hospital is to encourage him in the belief that although he is maimed he is still capable of living a useful life. To this end he should be spoken to, encouraged to ask questions, and a careful explanation should be given to him of all the means at his disposal for becoming fit to earn a decent living. Particularly is it necessary, when his mind is in a receptive condition, to make him understand the meaning of the new warrant which makes it plain that after a man's pension is fixed it cannot be diminished by any increase of capacity on his part. This 'orientation,' as the French call it, is a very important matter, and all those in charge of wounded men should be encouraged, if not ordered, to approach them from this point of view. If the medical officers in home hospitals in charge of disabled men were to take this as an important part of their duty they would find that much of their day that is now devoted to pursuits having a purely personal interest would be filled by very useful work.

"In addition, the systematic visitation of hospitals by competent people, not necessarily women, would be of the greatest value. Similarly, any hospitals for amputation cases, like Roehampton, and hospitals for neurasthenics, like that which will be shortly opened at Hampstead, ought to have in connection with them a small re-education school with workshops. It is interesting in this connection to note that among the men at Roehampton who have attended even a fortnight's course of

training in the workshops, 80 per cent. presented themselves for professional re-education. Further, among those who have not gone through this short preliminary course at the hospital, only some 5 per cent. or 10 per cent. presented themselves afterwards for professional re-education.

"There was considerable discussion in this Section as to whether re-education of a purely professional kind should be under the direction of a medical man or under the direction of the teacher of whatever kind of work had been deemed suitable for the patient. To the British delegates the solution appeared to be obvious. There are three people to be considered: the man, his medical attendant and the instructor. The man ought first of all to have his choice of the type of work which he desires to develop. If such work is manifestly unsuited for his state of health the doctor and the instructor ought to confer and arrange what type of work analogous to that which the man chooses for himself is suitable for his physical condition and mental capacity. There is a certain tendency abroad to leave the man out of account in these discussions, and this, in my opinion, is very unwise. The man will do much better work along the line of his choice than when he is dragooned into taking up work for which he has no natural inclination or aptitude.

"In connection with this I endeavoured to find out how far re-education was obligatory in France, Italy and Belgium. Roughly speaking, the regulations in France and Italy are the same, namely, that as long as a man is in hospital he is compelled to accept re-education if thought necessary by those in charge, and, further, he can be kept in a school of re-education for six months after his dismissal from hospital. In Belgium a law was passed in April, 1917, which made it obligatory for every disabled soldier to remain under supervision in schools for re-education until he can be repatriated. In France compulsion is very peaceful, as it seems to be in Italy, and the compulsion on the part of the Belgian Government is only because there is now no free Belgium in which to settle their men, and they are devoting all their attention to the education of craftsmen, as far as possible, to meet altered conditions after the war. Compulsory re-education is evidently impracticable for this country, and the French authorities are also not in favour of it. It is an open question whether some kind of pressure ought not to be brought to bear on those who either from indifference or laziness refuse to be re-educated. It would appear that a certain provision for this is made in the warrant for pensions.

"Section VI was in many respects the most important Section of the Congress, and dealt entirely with the literature and propaganda part of the scheme. At this Section Sir Alfred Keogh's report was presented, and created a very favourable impression on the allied delegates. They were particularly struck also by the way in which our new Minister for Pensions had faced the fact that a reduction of pension after re-education would absolutely sterilize any efforts made in the direction of the proper re-education of the injured soldier.

"An excellent suggestion was made by one of the British delegates that a liaison officer should be appointed both in France and England to keep in touch with all the work done both in physical treatment and re-education in both countries.

"There are certain points which have struck me during the Congress as being of special interest to this Committee, namely:

(1) "The importance of physical treatment being given as early as possible after the man's injury, and also the importance of having this treatment carried out patiently and skilfully for the proper length of time. I saw many cases at Port Villez who could have been made much more efficient if treatment had been continued longer.

(2) "That the success of any department which I saw evidently depended not only on the equipment of the place but also on the ability, concentration and sympathy of those in charge. It is of equal, if not of greater importance to have well-trained and interested men in charge of physical treatment and curative re-education as to have a well equipped institution.

"The old points have to be emphasized in the work of all the allied countries. The cases who will require physical treatment must be drafted early to special institutions; proper equipment for these institutions in every branch of physical treatment and curative manual work is necessary; skilled men interested in this kind of treatment must be found and appointed to take charge of such institutions, and to meet this demand there is needed at the present time in all the allied countries the establishment of centres at which medical officers, students and orderlies can be properly trained in this work.

"I do not think that Great Britain is now behind her allies in the treatment and re-education of the disabled soldier, but neither France nor ourselves can permit ourselves to be complacent. It would appear that in this country the civil organization of the whole subject of re-education is well on its way to be extremely effective, but all organizations for professional re-education will fail if the preliminary medical part does not go on improving."

The Committee from whose report I have first quoted has been very active in investigating matters not only concerning hydrotherapy but all forms of physical therapy which may be combined with it.

It calls attention to the present lack of understanding the benefits of physical means and complete physical equipment, and the entire want of recognition of these and allied means of healing which, years ago, was commented on by Sir William Osler.

In their report to the Council of the Society in April, 1916, R. Fortescue Fox, M.D., made the following explanation of their activities:

"A memorandum on the value of medical baths in the treatment of wounded and invalid soldiers was addressed to the army medical authorities on December 26th, 1914. It did not emanate from this Section, but from a number of representative medical men. It pointed out in the first place the extensive use of medical bath establishments for the military in continental countries. It showed the great need for hydrological and other physical treatment for the men leaving hospital; that large numbers of these, even those labelled 'incurable' could be, if not cured, at least greatly relieved by physical methods; and that bath treatments in particular were suitable both for surgical and medical cases, and could be employed with advantage not only at the spas, but at the military hospitals and elsewhere in the great towns. The signatories also called attention to the scientific value of a simple and uniform system of case records, which should record the physical treatment of disabled soldiers—a work which had not hitherto been attempted in the health resorts of this country.

"In January, 1915, the matter was discussed at a special meeting of the Section, at which Surgeon-General Russell, D.D.G.A.M.S., was present. Agreeably to his proposal the Council thereafter proceeded to appoint a committee to prepare information for the Army Medical Service. To its great advantage it numbered among its members Surgeon-General Russell and the President of the Society, Dr. Frederick Taylor. On behalf of my colleague, Dr. Campbell McClure, and myself, I have now to report the result of its work during the last fourteen months.

"In April, 1915, the Committee was informed that a system of 'combined physical treatment' for wounded soldiers had been installed at the Grand-Palais in Paris. I thereupon visited Paris, and with the courteous assistance of the officials, and particularly of our colleague, Dr. Quiserne, examined the hydrological and other methods employed at the Grand-Palais Hospital. The application of very high temperatures to the limb in a 'whirl bath' (balnéation à l'eau courante) appeared to me to be a method of much value, especially as a preparation for massage and mobilization of the joints. Full accounts both of the methods and the results obtained have since been furnished to us from time to time, with statistics, and these form the basis of the report which was published by the Committee in the *Lancet* of February 5th. The President of our Section has since that date made a special visit of inquiry to Paris. If only a part of the happy results that are claimed to follow from the 'combined physical treatment' of wounded soldiers is in fact realized, it appears to the Committee that these methods are justified and would prove in this country of inestimable value not only from the medical and humanitarian but from the economic point of view. The saving to the state in pensions and gratuities by the reduction of disability of disabled men in France is stated to amount to a very large sum.

"In recommending physical treatment we have been asked why we have departed from the province of balneology or hydrology. It is a sufficient answer that this section has never regarded the scientific study and use of physical agencies as alien to its scope and purpose. Health resorts exist for the application of physical treatment, and in addition to waters and baths many methods are employed accessory or adjuvant to hydrological and climatic treatment. Therefore, in recommending to the army medical authorities the systematic employment of combined physical treatment for disabled soldiers the Section is on familiar ground. No section of medicine can operate in a water-tight compartment, and least of all one devoted to the interests of hydrology.

"At the present moment there are within the hospitals or leaving the hospitals, in numerous convalescent homes and in their own homes, thousands of disabled men, for whom we believe a combined physical treatment affords a hopeful and the only hopeful means of recovery and of return to peaceful avocations. To meet this great need an altogether unique extension of what may perhaps be called 'orthopædic' work has become necessary. Without forgetting the achievements of surgery, we believe that in this particular field physical treatment ought to play a predominant part. It should take up the work which comes to an end in the hospital, and in multitudes of cases should prevent or minimize permanent disability. As regards the British health resorts, they are doing a magnificent work, but the lack of records is, and will prove to be, in our opinion, a serious evil. But in the present emergency we are all feeling our way, and I am sure there is no disposition to neglect what can be shown to be a necessary duty. We also acknowledge with much satisfaction that most valuable physical treatment is, and will be, available for disabled men at the large convalescent camps and command depots, in regard to some of which we have been asked to advise.

"But, when the full extent of this provision has been made, there still remains a great residuum (how great may it not become?) of men who will not have the benefit of the health resorts nor yet of the convalescent camps, many of them being discharged and returned to their own homes. For all these, both officers and men, the Committee are of opinion that a combined physical treatment should be provided, and that it might be well done, as in France, in institutions devoted to that

purpose. Such institutions would not be hospitals for in-patients, but rather clinics or out-patient departments, where whirl and other baths, electricity, massage and mechanical treatment would be applied under the best auspices and for the requisite period of time. In extending their view beyond the health resorts proper, and recommending as they have done that the fullest possible advantage should be taken of physical remedies for disabled officers and men in London and in the country generally, the Committee are confident that they have the approval of the Section."

I append to this, among the papers accompanying this statement, a description of a model hydrotherapeutic installation for soldiers, with ground plan, showing the space and size required, as it may serve as a useful suggestion for both military and civilian needs, the cost of which will be found to be moderate.

The results of physical therapy are thus summed up by W. A. Turrell, M.A., M.D. (Oxon), Major, R. A. M. C., in a paper recently appearing in the *Lancet* and read before the Section of Electrotherapeutics of the Royal Society of Medicine.

"To summarize very briefly the war services which electrotherapy can render to the state are as follows:

(1) "A considerable number of those who would otherwise remain permanently unfit can be rendered fit for general military service.

(2) "The severe pain of many of those wounded or injured by exposure on military service can be completely arrested or greatly relieved by these methods.

(3) "Electrical treatment is of great service in many of the less serious cases, often effecting a speedy cure and a quicker return to the fighting line.

(4) "Electrotherapy fully and efficiently developed will result in a very considerable reduction in the amount paid for state pensions, and, what is far more important, will restore function to many crippled limbs."

The work of Dr. Turrell has been very highly spoken of by C. Thurston Holland, M.D., President of the Roentgen Society in England, in these terms:

"The great advances made during the past decade in various forms of apparatus, and the equally great advances made in methods of treatment, scarcely require that attention should be called to them—they are matters of common knowledge.

"Electrical methods of treatment have in the past suffered much from the halo of quackery which has surrounded them. The men into whose hands these methods of treatment fell were, many of them, at any rate to a certain extent, charlatans. Now this is largely changed, and the electrotherapeutic work which the late Lewis-Jones did so much for, is at many of our larger hospitals being carried on most efficiently and in the best traditions of medical research by a number of highly skilled, highly efficient men. Of the value of electrotherapeutic methods what greater proof is required than the knowledge of what these methods have done for the wounded in this present war; methods which have been brought forward in a remarkable manner by the requirements of the wounded; and the necessity for trained, qualified medical men to superintend this treatment has become very obvious indeed.

"In 1915 at the Radcliffe Infirmary, Oxford, under the direction of my friend Major Turrell, 17,225 treatments were given by various electrotherapeutic methods, mainly to soldiers. The enormous yearly increase of this work at this one hospital shows in a striking manner of what value the results are when such a department is directed and controlled by a thoroughly efficient medical man who understands his apparatus, its applicability to individual cases, and whose thorough knowledge

of medicine and surgery enables him to apply to each case the individual treatment indicated in a scientific, as opposed to a merely haphazard, manner. I instance Major Turrell in this way because I have seen, and been much impressed by, his methods, and the manner in which his hospital department is carried on; but I have no doubt whatever that there are many others in the country where medical men are doing equally good work on similar lines. The real point is that this work is becoming of more and more importance in all directions, the different means at our disposal for effecting certain results are becoming more and more varied, the profession generally is recognizing the value of such work and the necessity for skilled medical control, and it follows that those who are to exercise this control must have the means of acquiring the knowledge to fit themselves for the work. That is to say, that the teaching must be recognized and regulated.

"In many countries this teaching is being organized and carried out on proper lines; in many countries university professorships and lectureships have been given to medical men qualified for such posts. We must not lag behind. Perhaps some of you may think that in the middle of this great war matters of this kind are not of great importance. I do not agree. We have got to prepare for the peace we all look forward to, and no harm can come by the ventilation of certain things asking for reformation and accentuated by conditions brought about by the war itself. America has been moving strongly from the X-ray point of view. In quite a number of universities and hospitals and colleges are professors of radiology and of electrotherapeutics, and in others lecturers on this subject; and it follows upon this, of course, that there are special courses and special lectures for teaching purposes.

"There is the necessity for post-graduate teaching, and this must be arranged from two points of view. At the present time elementary post-graduate courses are of the greatest importance, as so many of the practitioners had left hospital before either X-ray work began, or before it reached its present position. There will, however, always be a necessity for this teaching in order that medical men in general practice may have an opportunity of keeping themselves abreast of the times. For many years I found in my work that nearly every case came to me on the recommendation of a consultant; it still is the fact that the large majority of cases come in this way; of late years, however, there has been a growing tendency on the part of the general practitioner to have many on his cases examined from the X-ray point of view before calling in a physician or surgeon. This condition of affairs will, I believe, go on, and more and more work will come in that way as the medical student and so the general practitioner gets more and more knowledge of the possibilities of radiography." . . .

"And now I come to my final problem. This is the medical student. This unfortunate individual is already so over-burdened with subjects, lectures and classes all arranged for examination purposes, that it is said to be impossible to add any more to the curriculum. The answer to this must be that X-ray work has become of such overwhelming and paramount importance that it cannot, and must not, be shelved any longer. The public, and not the medical student, is what has to be considered, and the medical student does not imbibe knowledge on his own account, but because it may enable him to practise as a medical man in a safe and reliable manner; therefore, I say it is essential that the student should be compelled to imbibe some knowledge of what is now the most important exact means of diagnosis there is in a large and growing field of diseases, and that as the large majority of students will eventually become general practitioners they must have this knowledge before being let loose upon the public.

"The future general practitioner must have, at any rate, enough knowledge of X-ray and electrotherapeutics to enable him to know when an X-ray examination for diagnostic purposes is indicated, when he should recommend to a patient treatment by one or other of the various electrotherapeutic methods. Now it is a well known fact that the medical student will not imbibe knowledge for its own sake, but only from the examination point of view—of course, this applies to the average student—and unless he has the fear of the examination before him he does not attend lectures and classes. I believe that the time has come when it is essential that a course of radiology and electrotherapeutics should be included in the curriculum, and that in the final examination questions upon these subjects should be a possibility. Then the corollary to this becomes obvious: the teachers of these subjects must have recognized standing and position." . . .

"In conclusion, I am hoping to live to see the time when radiology and electrotherapeutics, taught at all universities and medical schools by professors and lecturers, will be carried on throughout the kingdom by well trained and medically-qualified specialists, and by such men and women only."

Dr. William Benham Snow, of New York, whose very complete electrical equipment I have inspected, has stated his views in a recent editorial on this subject. He is the author of many works on the subject: "Radiant Light and Heat" (1909); "Static Electricity and the Uses of the Roentgen Ray" (1905); and editor of *The American Journal of Electrotherapeutics and Radiology*. He says:

"In the larger hospitals, as in the London hospitals, the static current, as stated by Dr. Turrell in his article, is of inestimable value in the treatment of so many painful conditions occurring in connection with the rigorous exposures to which human beings are subjected at the front. Sprains, synovitis, induration about wounds, the forms of neuritis and including the largest number of painful conditions are best relieved by the various static modalities which will be found invaluable for the relief and speedy restoration of these sufferers to health and service.

"These measures which prove so valuable in times of peace, in experienced hands, are of inestimably greater value for the relief of those subjected to the strenuous exposures to which human beings are exposed in times of war. The recognition of these methods as coming from abroad, together with the verified experience of those who know them here, confirms their great value, and suggests the importance for their provision for our own soldiers if called into the warfare, as seems probable at the present time.

"It is of paramount importance that American hospitals here and abroad shall be provided with every means of rendering more comfortable the suffering soldiers who are exposing themselves not only to the inclemencies of the weather, but to the dangers of warfare; for too much cannot be done looking to the relief of suffering under these conditions.

"At this time, when the Government is asking the national societies and individuals in what field of endeavour they will serve their country, it becomes the duty of all such who are familiar with the use of the methods referred to, and who are so well conversant with their value in the treatment of inflammatory and painful conditions, to use their personal endeavours and influence to promote a better understanding of these matters, as well as giving their services to the Government for their administration."

In Canada I have had the benefit of the experience of Surgeons-General Jones and Fotheringham, Surgeon-Colonel Cameron and others, whose opinions will be found in the proceedings before me.

Canada has itself established in England some institutions which rank high and are referred to more than once by those whose views I have already given. They are also dealt with by Surgeon-General Jones, whom I now quote on the subject of the training of medical students and graduates:

"There is one point I should like to take up, and I think it is very important. That is, that the education of the medical student in this country does not tend to any great knowledge about hydrotherapy or electrotherapy, and we found extreme difficulty in getting men to take charge of this work, or to take an interest in it. When we went to Buxton and opened the hospital there, I came to the conclusion that we had practically no one upon whom I could lay my hands who had any great knowledge of hydrotherapy as carried out at any of the spas; and, therefore, I took steps to have two medical practitioners in Buxton given honorary commissions in the Canadian Army Medical Corps so that their services might be available for the men in our hospitals at Buxton. There are not many baths and spas in Canada, and the staffs of these places are usually men who have long resided there. There is practically little or no training of the medical student as regards hydrotherapy and not a great deal as regards electrotherapy."

I may now quote some views as to the present status of electricity as a modern curative agent. Dr. Desloges, of the Hotel Dieu, in Montreal, says:

"The immense progress made of late years by electrotherapeutics has won for it an honourable place among the most precious resources of therapeutics. From a simple accessory it has become a powerful adjuvant, and will become in the near future one of the fundamental sciences of medicine. Professor Rivière does not fear to call it the most constant, the surest and the most scientific of all methods.

"Its scope has increased with gigantic strides. As this physical agent becomes better known, and its many qualities are used in a more scientific manner, its marvelous curative powers are recognized.

"There is no longer any doubt of its efficacy. Clinical experiments have proved its real value on a solid basis sufficient to convince the most sceptical. But laboratory experiments have confirmed this theory in such a way as to leave no room to doubt the virtue of electricity in the treatment of diseases."

Wm. H. Schmidt, M.D., of Philadelphia, said in March, 1917:

"There are many physicians still who are unaware that electricity has a firm scientific basis for its employment in medicine, and many will look at you with sympathy when you tell them you employ electrotherapeutics. A campaign of education is necessary to correct this error. Much can be done to bring these facts before the practising physician, but more will be accomplished by having an efficient course in our medical and post-graduate schools under competent teachers who will start the student in the right path and instil a proper respect for its true value. Teachers in our medical schools in other branches, who do not understand electrotherapeutics, must be shown that electricity is not purely psychic, but that it has a sound basis of use in medicine."

The American Journal of Electrotherapeutics and Radiology, in its editorial in June, 1917, discusses the status of electrotherapy in this way:

"The oft-repeated statement by medical men, particularly of neurologists, that electrotherapeutics is practically a psychic measure, has arisen by the bungling and impractical use of the various currents by these men. The modern physician who uses electricity by modern methods looks with amazement upon the old text books on electrotherapeutics, and when he reads the medical works, particularly on nervous diseases, and observes the references made to the indication for the use of

electricity, and the way in which they still employ it, is aghast that no progress has been made by these writers for many years in the practical employment of an agent so potent for good.

"This is an age of progress, and when we compare the commercial uses of electricity with its employment thirty years ago the contrast is amazing, and so with electricity in medicine. It is safe to say that the present status of electrotherapeutics in the hands of those informed as to its effects, indications and technique for employing it, is in every respect keeping pace and progress with its commercial uses.

"Electricity is undoubtedly the most important means of restoring functional conditions and arresting organic processes in medicine. This fact must be so conceded and acknowledged that instead of the present attitude of those who know little or nothing of its properties and uses, and would reject its employment, they will be confronted by an energetic propaganda by those who are familiar with its properties and uses and methods of application, and that then it may be brought into its true light and significance before the medical profession.

"Let the obsolete notions concerning ascending and descending currents and the psychic uses of electricity be placed for ever in the background, and bring forward the essential properties and principles of employing the agency most effective and scientific in the treatment of inflammation, defective metabolism and inert processes. To do this is the duty of every physician conversant with its important indications.

"There is no field in medicine that offers greater encouragement for study and application than electrotherapeutics; therefore, the medical man who awakes to its importance and takes up the work scientifically, is certain to be popular with his patients, if not with the medical men who ignore it. The time is past when the subject can be treated slightingly, and the men who continue to assume this attitude will become more and more unpopular with their patients. This is manifested on all sides. On the other hand, the medical man who essays to use electricity without knowledge of the principles and methods of application is dangerous to the community and a reproach to the medical profession, both of those who do and those who do not understand its uses."

To recur again to Dr. Tait McKenzie's resumé of treatment and its effects, I quote the following:

"The average time of each man spent in the treatment was well under three months, and the fact must not be lost sight of that even though a man is not sent back in category "A" his opportunities for a useful career in civil life after the war have been enormously increased and the burden on the nation in future pensions correspondingly lightened.

The following table from Dr. McKenzie's paper is instructive:

APPENDIX "B."

GUIDE TO OFFICERS AND CIVILIAN PRACTITIONERS IN MAKING MEDICAL EXAMINATIONS OF NEW ARRIVALS, AND IN ALL RE-EXAMINATIONS.

Treatment.	Conditions for which they are prescribed.	Abbreviations.
(1) Massage	(1) Contracted scars; (2) stiffened joints; (3) nerve injuries; (4) paralysis; (5) certain rheumatic conditions; (6) trench feet.	
(2) Radiant Heat	(1) Painful scars; (2) painful rheumatic joints and muscles.	R. Heat.
(3) Electricity ..... (*a*) Faradic (*b*) Galvanic (*c*) Sinusoidal (*d*) Ionization	(1) Painful scars; (2) paralysis; (3) disordered action of heart; (4) contractures.	Elec.
(4) Vibration	(1) Disordered action of heart; (2) rheumatism of back and thigh.	
(5) Corrective Exercises ..	(1) Stiffness or weakness of fingers; (2) wrist; (3) elbow; (4) shoulder; (5) back; (6) abdomen; (7) thigh; (8) calf; (9) ankle; (10) foot.	Med. Exercises.
Remedial Exercises (in small classes).	(1) Flat foot; (2) bronchitis, after gas poisoning; (3) gun-shot wounds in chest.	Med. Exercises.
(6) Hydrotherapy ..... (*a*) Douche (*b*) Sedative (*c*) Whirlpool bath (*d*) Brine bath	(1) Nervous shock; (2) rheumatism; (3) disordered action of heart; (4) painful joints; (5) contractures; (6) trench feet.	Hydro.
(7) Hospital Treatment ...	(1) Medical, surgical and dental; (2) eye conditions; (3) ear conditions; (4) sputum examinations; (5) X-ray examinations.	Reports required.
(8) Light Route March; two to four miles free walking.	(1) Debility after enteric and dysentery; (2) partial recovery from wounds.	L.R.M.
(9) Light physical training; movements slow and without running or jumping.	(1) Debility; (2) partial recovery from wounds.	L.P.T.
(10) Full physical training, including running and jumping and gymnastic exercises. Also full route march in quick time.	For men ready for Class "A" and preparing to return to unit.	F.P.T. F.R.M.

The reason why equipment in all departments of physical therapy should be found under one roof is thus given, both practically and scientifically, by Dr. Fox in his book:

"Many patients require for their restoration to health a careful combination of physical, electrical and psychical measures. A human being is an entity, both as to mind and body, and anything which deleteriously affects either the one or the other in any respect may interfere with the recovery of a local lesion. For instance, a dropped wrist, which should apparently do well, may hang fire because the patient is insufficiently clad, because he smokes too much, because he fears—it may be subconsciously—that recovery will mean a return to the front; or because he has had no leave for months, and is 'fed up' with hospital life. A broad clinical outlook and an understanding of human nature are not less essential to success than specialized knowledge and technical skill. 'Where there is no vision the people perish.'

"The physical forces are known to be closely correlated. It is questionable whether they ever act singly upon the human body. In solar rays light is combined with heat, and with other invisible radiation extending beyond the violet and the red. So it is in a lesser degree with all kinds of artificial radiation baths. The different kinds of rays are in process of being disentangled, and their medical value and uses determined. In the case of baths, also, the effects of heat and of cold upon the skin are combined with those of moisture and pressure, and sometimes of movement, and of the gases and salts contained in the water, besides those belonging to its physical qualities, such as electrical, potential and radio-activity. Again, it is well known that frictions and movements are accompanied by heat and electric currents.

"These examples show how closely physical forces are related to one another, and also how intimate and complex are the relations existing between them and the recipient human being. To bring those energies into effective operation upon the disordered tissues and organs of the body is the task of physical treatment. And it has for its foundation nothing less than a true and philosophical correspondence—dynamic remedies for a dynamic organism.

"All this is more or less common ground, and it may seem unnecessary to emphasize admitted truths. The facts are obvious, but here, as elsewhere, it may be doubted whether the full significance of familiar facts is equally plain. The more familiar the facts, the deeper and the more concealed is apt to be their meaning. The effect of cool, fresh air in tuberculosis is one of a multitude of similar observations. Do these not unmistakably signify that there are laws governing the reaction of the human body to heat and cold, and that by virtue of these laws reactions may be produced in infective disease, which increase the resistance of the tissues to invasion, and so check the extension of disease and favor the natural processes of cure? Do not such observations prove that there is in truth a complete body of doctrine, much of it still undefined, that will hereafter determine the actions and uses of physical remedies?

"This is not the place to attempt to state or summarize, even in the briefest manner, the ascertained principles or laws which have been found to govern the action of physical remedies on the body. They relate to a department of medicine which is full of interest and but little explored, and presenting much opportunity for fruitful research. Although many facts are familiar, the science of physical treatment remains still in great part a *terra incognita* and a *doctrina indocta*.

"Their proved effect upon the human body in health and disease marks out physical remedies as worthy of searching examination. No superficial study of

this or that isolated method of treatment is of any permanent value. It avails nothing to proclaim cold as a remedy in the nineteenth century, or heat in the twentieth. What is needed is a critical study of physical remedies as a whole, and this goes best of all *pari passu* with their practical application. Here, as elsewhere, clinical study is the most accessible and the most fruitful field for research. Observation by the trained observer, aided by instruments of precision, will not only guide the course of treatment, but gradually build up the science upon which the art of treatment depends."

SUPPORTING STATEMENT "B."

Osteopathy.

It is necessary to insist as a preliminary upon understanding the present attitude of the leaders of medical education, and upon the true conception of the aim of a student's training. That aim is intended to fit a youth to work with open and intelligent eyes at the problems that disease is ever presenting, and to equip him mentally so that he will not be the slave of any dogma or school. And the scientific and practical sides of medical education insisted upon by present teachers are so correlated that they require both a preliminary foundation of ordinary education as well as a more professional training, in which the student is afforded the sight and handling of actual cases and a laboratory in which he can test his diagnosis.

To impose a limitation upon this training by the setting up of a theory which is supposed to cover all possible cases, and by assuming that this theory will form a starting point to all medical knowledge, and that therefore training in some hitherto used department of knowledge is unnecessary, is neither rational nor practical. For no two bodies are alike, and no two individuals react alike and behave alike under the abnormal conditions known as disease. If the student has some *a priori* doctrine from which he starts, he colors his whole field of vision and disables his mind from accepting results as truly indicating conditions. He receives them as manifestations, more or less proving his theory and as related to it, whereas they may be caused by disorganization quite foreign to his point of view. The Chicago College of Osteopathy thus defines diagnosis:

"The student learns to diagnose correctly by tracing the relationship of the condition which he observes in his patient to the causative lesion. A lesion, be it observed, is any disturbance from normal in structure or environment, which tends to prevent the function of any part of the organism."

I do not think that it can be too emphatically stated that the first and most important value of medical education is its ability to detect disease and ascertain its exact description. Till that is truly done, the most accurate knowledge of how to cure specific ailments is useless. Anything that prevents a patient and candid survey of the conditions as they are is a detriment to a practitioner and a disservice to his mental activity.

I am well aware that many of those who desire to practise medicine without undergoing the training now required in this province will admit the foregoing, and will claim that all they desire is the right to use their own method of cure, which is preceded by diagnosis—the paramount importance of which they fully acknowledge. But this is ignoring the real result of scientific training, which is

the open mind and the ability, born of knowledge gained by personal training in the methods of the recognition of disease, to discern the true source of the distemper. If a practitioner is shut up in any direction by preconceptions, and is without the equipment which is conferred by rational and unrestricted inquiry, he comes to the task of diagnosis with only one eye, as it were, and is necessarily unable to prosecute his inquiry by experiment and reflection.

Diagnosis does not wholly depend on sight, manipulation and information. It must be practical, and, in a proper sense, empirical until observation of the effect of treatment either confirms or denies the original decision. And it is therefore begging the question to say that a diagnosis, fixed and unalterable in some of its elements, is a true diagnosis, while it is in reality only a decision that, whatever the cause, a particular treatment must be followed irrespective of its real applicability to the particular manifestation of disease. The result of this method of diagnosis may be said, in the language of a distinguished physician, to be a sort of popgun pharmacy, hitting now the malady and again the patient, the physician himself not knowing which.

"To recognize promptly and positively many of even the common diseases requires a skilled diagnostician who understands the use of scientific laboratory methods. The successful treatment of diphtheria, malaria and syphilis—as examples—depends on an early and positive recognition of the causative agent, respectively, the Klebs-Loeffler bacillus, the Plasmodium malariæ and the Treponema pallidum. To be able to do this requires a knowledge of these organisms, and skill in the use of the microscope and laboratory methods of diagnosis. The cure of many diseases, such as tuberculosis, cancer, spinal meningitis, etc., depends not only on a positive but especially on an early diagnosis, and this, likewise, requires a thorough training in modern medicine. Without a training in scientific methods, the diagnosis of these diseases is uncertain, or impossible, since the signs and symptoms easily lead to their being confused with disorders requiring radically different methods of treatment. Without a correct diagnosis any form of treatment is guesswork and unscientific. A training in the branches fundamental to modern scientific medicine is an essential qualification for all who undertake to treat human ailments, no matter what treatment be adopted. This is a fundamental fact that defies contradiction." (*The Journal of the American Medical Association.*)

It is interesting to note the claims of osteopathy made by Dr. A. T. Still, who discovered it in 1874. In his autobiography Dr. Still says:

"Osteopathy opens your eyes to see and see clearly; it covers all phases of disease and is the law that keeps life in motion." (P. 275.)

"An osteopath must know the shape and position of every bone in the body, as well as that part to which every ligament and muscle is attached. He must know the blood and the nerve supply. He must comprehend the human system as an anatomist, and also from a physiological standpoint. He must understand the forms of the body and the workings of it." (P. 344.)

"We control all the fevers of this or any other climate, all of the contagious diseases, such as mumps, chicken-pox, scarlet fever, measles, diphtheria and whooping-cough; also flux, constipation, diseases of the kidneys and of the spine. We deal with the brain, the liver, lungs and the heart. In short, every division of the whole human body, with all its parts." (P. 347.)

While Dr. Still disclaimed all connection with medicine as then practised, and denounced drugs as poison, the modern osteopath has advanced very far towards both of these things. It is curious to note the contrast of the curriculum in some

of the more advanced osteopathic schools with the statement that what should be known was how to use the bones as levers to relieve pressure on nerves, veins and arteries, which was osteopathy as Dr. Still viewed it. (See "Historical definition" in Autobiography, preceding the preface.)

An interesting situation has arisen in the United States, as to which the following facts should be carefully studied. They relate both to the teaching colleges of osteopathy and to the status of osteopathy itself. From them the general conclusion may be drawn that owing to State regulation the osteopathic body has been forced to provide increased educational facilities and to lengthen the courses in its colleges, while at the same time its very advancement on those lines has almost obliterated the differences between it and modern medicine, while its adherents are drifting from its philosophy.

Its future thus hangs in the balance from an educational standpoint.

I append here some extracts from the year-books of five of the most up-to-date osteopathic colleges in the United States, of which four are (with another at Cambridge, Mass.), according to the statement of R. B. Henderson, D.O., to me, those mostly attended by students from Canada.

Chicago College of Osteopathy (Year-book, 1915-16).

"By the práctical application of the ideals of the Chicago College of Osteopathy, the osteopathic branch of practice in the healing art has become established among the professions that require the highest educational standard." (P. I.)

The curriculum of the above College is now given:

PROPOSED SCHEDULE.

First Year.	Per Semester. Didactic.	Laboratory.	Total.
First Semester—			
Anatomy (Osteology, Myology, Arthology)	180		
Histology	36	72	
Embryology	36	18	
Biology	36	36	
Chemistry (Inorganic)	90	72	
Physiological Physics	36	18	630
Second Semester—			
Anatomy (Angiology and Neurology)	96	90 Dissec.	
Histology	36	36	
Embryology (Application to Anatomy)	36		
Physiology (General, covering the Cell, Constituents of Body and Body Fluids)	90		
Chemistry (Inorganic and Organic)	90	72	
Pathology (General, Didactic and Laboratory)	36	72	654
			1,284
Second Year.			
First Semester—			
Anatomy (Splanchnology and Regional)	96	90 Dissec.	
Applied Anatomy	36		
Physiology (General, covering Digestion, Absorption, Respiration, Nutrition, Muscles and Heat)	36	54	
Osteopathic Application of Physiology and Neurology	36	36	
Physiological Chemistry and Toxicology, including Emetics and Catharsis	36	54	
Principles of Osteopathy	54		
Bacteriology and Serum Pathology	72	110	
Pathology	36		
Social Hygiene	18	..	764

Second Semester.	Per Semester. Didactic.	Laboratory.	Total.
Anatomy (Special Application to Osteopathy)	180		
Applied Anatomy	36		
Physiology (General), Nervous System, Special Senses and Reproduction	36	36	
Osteopathic Applied Physiology and Neurology	54	36	
Physiological Chemistry and Toxicology, including Emetics and Catharsis	36	54	
Principles of Osteopathy	90		
Physical Diagnosis	36	36	
Technique (Tissue Palpation)	36		
Hydrotherapy	18	..	738
			1,502

THIRD YEAR.

First Semester—			
Theory and Practice of Osteopathy	90		
Technique	54		
Obstetrics	36	18	
Gynæcology	36	18	
Surgery (Major)	54	36	
Surgery (Minor)	18		
Anæsthesia (General, Local and Anodynes)	18		
Dietetics	18		
Eye, Ear, Nose and Throat (Etiology, Pathology and Symptomatology)	18	18	
Dermatology	18	18	
Experimental Pathology	18	18	
Pediatrics, including Infant Feeding	18		
Laboratory Diagnosis	36	72	
Hydrotherapy	18		
Autopsies	..	36	
Clinical Treating	..	108	792
Second Semester—			
Theory and Practice of Osteopathy	90		
Technique	72		
Obstetrics	36	18	
Gynæcology	36	18	
Surgery (Major)	54	36	
Surgery (Minor)	18	18	
Anæsthesia (General, Local and Anodynes)	18		
Dietetics	18		
Eye, Ear, Nose and Throat (Etiology, Pathology and Symptomatology)	18	18	
Dermatology	18	18	
Experimental Pathology	18	18	
Laboratory Diagnosis	..	36	
Pediatrics	18		
Antisepsis	18		
Autopsies	..	36	
Corrective Gymnastics	18		
Clinical Treating	..	108	774
			1,566

FOURTH YEAR.

First Semester—			
Theory and Practice of Osteopathy	90		
Technique	54		
Obstetrics	54		
Gynæcology	36	18	
Surgery (Major)	36	36	
Oral Surgery (Elective)	18		
Pediatrics	18	18	
Eye, Ear, Nose and Throat (Practice)	18	18	

	Per Semester.		
First Semester—	Didactic.	Laboratory.	Total.
Genito-Urinary Diseases	18	18	
Osteopathic Diagnosis	..	90	
X-Radiance	18		
Corrective Gymnastics	18		
Hygiene and Sanitation	36		
Clinical Treating	..	72	
Dispensary, Bedside and Obstetrical Clinics	..	108	792
Second Semester—			
Clinical Laboratory Diagnosis	36		
Technique	54		
Obstetrics	54		
Gynæcology	36	18	
Surgery (Major)	36	36	
Orthopædics	18	36	
Pediatrics	18		
Eye, Ear, Nose and Throat (Practice)	18	18	
Genito-Urinary Diseases	18	18	
Osteopathic Diagnosis	..	90	
X-Radiance	18		
Hygiene and Sanitation	36		
Medical Jurisprudence	18		
Clinical Treating	..	72	
Dispensary, Bedside and Obstetrical Clinics	..	108	756
			1,548

Total number of hours, 5,900.

In a paper read by Dr. A. F. McKenzie, at the meeting of the Huron and Perth Medical Associations on July 15th, 1914, and published in the *Dominion Medical Monthly* in November, 1914, this statement appears in reference to the Littlejohn College and Hospital, now part of the Chicago College of Osteopathy:

"I have here the 1912-13 announcement of the Littlejohn College and Hospital. In looking through the list of text-books recommended, I find many which we all recognize as authorities: 'Gray on Anatomy'; 'Foster on Physiology'; 'Osler on Medicine'; 'Rose and Carless on Surgery'; and so on through the whole list. Anyone looking at this part of the announcement alone would not be able to distinguish it from that of a regular, commonplace medical school. The only two subjects which are different are 'Osteopathic Technique,' in connection with which no text-books are named, and 'Principles of Osteopathy,' in connection with which three text-books are named."

Philadelphia College of Osteopathy.

(Year book, 1916-17.)

The following is the curriculum:

The course of study graded progressively covers four years of eight months each.

First Year.

First Semester—	Hours per week.
Anatomy, Didactic	5
Dissection (8 weeks)	6
Physics, Didactic	2
Laboratory	2
Chemistry, Inorganic	3
Laboratory	4

First Semester—	Hours per week.
Biology, Didactic	2
Laboratory	2
Histology, Didactic	3
Laboratory	4
Personal Hygiene	1
History of Osteopathy	1
Second Semester—	
Anatomy, Didactic	5
Dissection (8 weeks)	6
Chemistry, Organic, Didactic	2
Laboratory	4
Histology, Didactic	3
Laboratory	4
Embryology, Didactic and Laboratory	2
Emergencies	1
Toxicology, Didactic and Laboratory	2

SECOND YEAR.

First Semester—	
Anatomy, Regional	3
Dissection (8 weeks)	6
Of the Nervous System	2
Physiologic Chemistry, Didactic	2
Laboratory	2
Physiology, as applied to Osteopathy (Didactic and Experimental)	2
Principles of Osteopathy	2
Pathology, General—Didactic	3
Laboratory	4
Bacteriology, Didactic	2
Laboratory	4
Second Semester—	
Anatomy, Regional and Visceral	3
Dissection, General (8 weeks)	6
Dissection of Nervous System	2
Physiology of Nervous System	2
Pathology, Special, Didactic	3
Laboratory	4
Principles of Osteopathy	2
Physiologic Chemistry and Urinalysis	4
Osteopathic Clinic	3
Minor Surgery	1

THIRD YEAR.

First Semester—	
Applied Anatomy	3
Obstetrics, Lectures and Demonstrations	2
Neurology	2
Mental Diseases	2
Gynæcology, Didactic	2
Clinic	1
Symptomatology and Osteopathic Therapeutics:	
Diseases of Gastro-Intestinal Tract	2
Diseases of Respiratory Tract	2
Diseases of Genito-Urinary Tract	2
Diseases of Children	2
Surgery, General	2
Dietetics	1
Physical Diagnosis	1
Osteopathic Diagnosis and Technique	2
Osteopathic Clinic	3
Osteopathic Clinical Practice	6

Second Semester—

	Hours per week.
Applied Anatomy	2
Obstetrics, Didactic and Demonstrations	2
Neurology	2
Gynæcology, Didactic	2
Clinic	1
Symptomatology and Osteopathic Therapeutics:	
Diseases of Gastro-Intestinal Tract	2
Diseases of Respiratory Tract	2
Diseases of Genito-Urinary Tract	2
Diseases of Children	2
Surgery, General	2
Dietetics	1
Physical Diagnosis	1
Osteopathic Diagnosis and Technique	2
Osteopathic Clinic	3
Osteopathic Clinical Practice	6

FOURTH YEAR.

First Semester—

Obstetrics, Didactic and Bedside Work	2
Surgery: General and Special	2
Orificial	1
Orthopædic	1
Clinic (Osteopathic)	2
Diagnosfic and Surgical Clinics (Courtesy of Pennsylvania Hospital)	2
Diagnostic Clinics	4
Mental, Surgical, Dermatological, Genito-Urinary, etc., etc. (Courtesy of Philadelphia General Hospital and the Department of Health and Charities of Philadelphia.)	
Ophthalmology: Didactic	1
Clinic	1
Public Hygiene and Sanitation	1
Osteopathic Jurisprudence	1
Osteopathic Clinic	3
Osteopathic Clinical Practice	6

Second Semester—

Obstetrics, Didactic and Bedside Work	2
Surgery: General and Special	2
Orificial	1
Orthopædic	1
Clinic (Osteopathic)	2
Diagnostic and Surgical Clinics (Courtesy of Pennsylvania Hospital)	2
Diagnostic Clinics	4
Mental, Surgical, Dermatological, Genito-Urinary, etc., etc. (Courtesy of Philadelphia General Hospital and the Department of Health and Charities of Philadelphia.)	
Ear, Nose, and Throat, Didactic	1
Clinic	2
Symptomatology and Osteopathic Therapeutics:	
Skin and Venereal Diseases	1
Osteopathic Clinic	3
Osteopathic Clinical Practice	6

CENTRAL COLLEGE OF OSTEOPATHY, KANSAS CITY.

(Year Book, 1915-16.)

The following is the curriculum:

The course of study covers a period of three years of nine months each, divided into six semesters of four and one-half months each.

An optional fourth year of five months is provided for those desiring it, equalling four years of eight months.

Classes are matriculated in January and September of each year.

The course of study, schedule and faculty subject to change.

The graded curriculum is arranged as follows:

FIRST YEAR.

First Semester—	Hours.
Touch Training	36
Physics and Word Analysis	54
Biology	36
Histology (Didactic, 90 hrs.; Laboratory, 54 hrs.)	126
Descriptive Anatomy	90
Inorganic Chemistry (Didactic, 54 hrs.; Laboratory, 36 hrs.)	90

Second Semester—	Hours.
Touch Training	36
Hygiene and Dietetics	72
Embryology	54
Histology	36
Organic Chemistry (Didactic, 54 hrs.; Laboratory, 36 hrs.)	90
Descriptive Anatomy	90
Dissection	144

SECOND YEAR.

Third Semester—	Hours.
Descriptive Anatomy	90
Infectious and Alimentary Diseases	90
Principles of Osteopathy	72
Organic Chemistry (Didactic, 54 hrs.; Laboratory, 36 hrs.)	90
Physiology	90
Technique	54
Clinic	72
Clinic Practice	108

Fourth Semester—	Hours.
Descriptive Anatomy	90
Physical Diagnosis	90
Principles of Osteopathy	72
Heart, Lung and Nervous Diseases	90
Physiology	90
Technique	54
Clinic	72
Physiological Chemistry, Urinalysis, and Toxicology	90
Clinical Practice	108

Fifth Semester—	Hours.
Applied Anatomy	90
Pediatrics	54
Regional Anatomy	36
Bacteriology (Didactic, 36 hrs.; Laboratory, 54 hrs.)	90
Gynæcology (Didactic, 54 hrs.; Clinic, 18 hrs.)	72
Surgery	90
Pathology (Didactic)	36
Clinic	72
Eye, Ear, Nose and Throat (Didactic, 54 hrs.; Clinic, 36 hrs.)	90
Osteopathic Mechanics	54
Clinic Practice	162
Obstetrics	54

Sixth Semester—	Hours.
Mental Diseases	54
X-Ray	18
Medical Jurisprudence	18
Fractures and Dislocations	54
Regional Anatomy	54
Hydrotherapy	18
Anæsthesia	18
Gynæcology (Didactic, 54 hrs.; Clinic, 18 hrs.)	72
Bacteriology	36
Laboratory Diagnosis	54
Pathology (Didactic, 36 hrs.; Laboratory, 54 hrs.)	90
Surgery	90
Clinic	72
Eye, Ear, Nose and Throat (Didactic, 54 hrs.; Clinic, 36 hrs.)	90
Osteopathic Manipulations	54
Osteopathic Practice	162

FOURTH YEAR.

Five-Months Course.

	Hours.
Applied Anatomy	90
Surgery	72
Eye, Ear, Nose and Throat (Didactic, 54 hrs.; Clinic, 36 hrs.)	90
Gynæcology (Didactic, 54 hrs.; Clinic, 18 hrs.)	72
Osteopathic Technique	54
Obstetrics (must personally attend six cases)	54
Laboratory Diagnosis	36
Pediatrics	54
Osteopathic Clinic	72
Clinic Practice	162
Dispensary and Bedside Instruction	36

COLLEGE OF OSTEOPATHIC PHYSICIANS AND SURGEONS, LOS ANGELES, CAL.

(Year Book, 1915-16.)

The following is the curriculum:

The course of instruction covers four years, of nine school months, and of thirty-four actual teaching weeks each year.

	Hours.	Hours.
Anatomy	704	704
1. Osteology, Syndesmology, Myology	80	
2. Upper Extremity and Neck	128	
3. Lower Extremity and Back	128	
4. Head, Thorax and Abdomen	128	
5. Regional and Relational	80	
6. Applied, Topographical, Surgical	80	
7. Comparative	80	
Embryology, Laboratory and Stereopticon		80
Histology, Laboratory, Lecture, Recitation		160
Chemistry		432
1. Inorganic (Optional with Students filing with the Registrar approved grades)	160	
2. Organic	80	
3. Physiological	160	
4. Toxicology	32	
Physiology		288
1. Blood, Circulation, Respiration, Digestion	96	
2. Absorption, Excretion, Metabolism, Internal Secretion, Nutrition, Animal Heat	96	
3. Neurology and Special Senses	96	

	Hours.	Hours.
Biology		192
1. Laboratory, Lecture, Recitation	80	
2. Laboratory (Optional with Students filing with the Registrar approved grades)	112	
Bacteriology, Laboratory, Lecture, Recitation		160
Hygiene		80
Pathology		340
1. General Pathology, Lecture and Recitation	80	
2. General Processes, Laboratory	112	
3. Special Organ Pathology, Laboratory	128	
4. Gross Pathology and Post-mortems	20	
Osteopathic Therapeutics, Lecture and Recitation		80
Osteopathic Technique, Laboratory Courses		232
Dietetics	32	
Hydrotherapeutics	16	
X-Ray and Electrical Diagnosis and Therapy	24	
Pharmacology and Materia Medica, 1	96	
Pharmacology and Materia Medica, 2	80	
Osteopathic Medicine, General Diagnosis and Practice		1,050
1. Physical Diagnosis	80	
2. Laboratory Diagnosis	..	
3. Neurology	130	
4. Psychiatry	80	
5. Dermatology and Syphilis	48	
6. Alimentary Diseases	60	
7. Infectious Diseases	60	
8. Pediatrics	112	
9. Respiratory and Circulatory Diseases	80	
10. Diseases of the Blood, Ductless Glands and Metabolism	32	
11. Genito-Urinary Diseases	48	
12. Clinical Practice	320	
Laryngology, Otology, Rhinology		64
Ophthalmology		64
Optometry		32
Surgery and Surgical Diagnosis		500
Orthopædic Surgery		48
Gynæcology		144
Obstetrics		160
Jurisprudence		20
Ethics and Economics		10
Thesis		40
Total required hours		4,856

American School of Osteopathy, Kirksville, Mo.

(Year Book, 1914-15.)

The following is the curriculum:

Tabular Course of Instruction.

The course of instruction covers three college years of nine months each, with a fourth year, which is at present optional, but which will ultimately be made a part of the required course.

Each year is divided into two terms. Classes are matriculated in September and January of each year.

First Year.

First Term—	Hours.
Anatomy—Lectures and quizzes, including demonstrations in Osteology, Myology and Syndesmology	90
Histology—Lectures, quizzes and laboratory work throughout the term	126

	Hours.
General and Physical Chemistry—Lectures, quizzes and laboratory work throughout the term	126
Physiology—Lectures, quizzes and laboratory work throughout the term on General Physiology and Physiology of Nutrition	108

Second Term—	Hours.
Anatomy—Lectures and quizzes, including demonstrations in Angiology, Neurology and Splanchnology	90
Bacteriology—Lectures, quizzes and laboratory	135
Physiology—Lectures, quizzes and laboratory work throughout the term on the special senses and nerves	108
Organic and Physiological Chemistry—Lectures, quizzes and laboratory work throughout the term	126
Histology—Quizzes and laboratory work	36
Embryology—Lectures, quizzes and demonstrations	45

SECOND YEAR.

First Term—	Hours.
Osteopathic Principles—Lectures, quizzes and demonstrations	90
Regional Anatomy—(Including anatomy of the Special Senses)—Lectures and quizzes with demonstrations on the cadaver	90
Practice of Osteopathy—Lectures and quizzes throughout the term	90
Osteopathic Mechanics—Laboratory and lectures	54
General Pathology—Lectures, quizzes and laboratory work throughout the term	126
Hygiene, Public Health Dietetics and Toxicology	90
Dissection—With quizzes, etc.	144

Second Term—	Hours.
Applied Anatomy—Lectures, quizzes and demonstrations	90
Practice of Osteopathy—Lectures and quizzes throughout the term	90
Neurology—Lectures and quizzes throughout the term	90
Special Pathology—Lectures, quizzes and laboratory work throughout the term	126
Gynæcology—Lectures, quizzes and laboratory work	126

THIRD YEAR.

First Term—	Hours.
Osteopathic Clinics—General clinic with lectures and quizzes two hours daily throughout the term	72
General Surgery—Lectures and quizzes, with laboratory work throughout the term	90
Eye, Ear, Nose and Throat—Lectures and quizzes throughout the term	90
Obstetrics—Lectures, quizzes and clinics throughout the term	140
Clinical Practice—Individual practice, by students, with weekly reports, six hours attendance per week at the Infirmary required	108
Physical Diagnosis—One lecture per week, with laboratory work throughout the term	30
Nervous and Mental Diseases	90
Reports—Cases in general practice, and the various specialties are required throughout the senior year as cases are treated.	

Second Term—	Hours.
Osteopathic Clinics—General clinics with lectures and quizzes daily throughout the term	72
Operative Surgery—Lectures, quizzes and laboratory work throughout the term	90
Skin and Venereal Diseases—Lectures and quizzes one-half term	60
Pediatrics—Lectures and quizzes one-half term	45
Clinical Practice—Individual practice by student, with weekly reports, six hours attendance per week at the Infirmary required throughout the term	108
Differential Diagnosis	90
Laboratory Diagnosis—(Including, blood, sputum, urine, and other tests by laboratory methods throughout the term)	40
Insanity—Lectures	30
Osteopathic Therapeutics	60

	Hours.
Medical Jurisprudence	20
Proctology	20
X-Radiance	20
Minor Surgical Clinics—In sections, each student	20

FOURTH YEAR.

Optional—

Osteopathic Clinics—General clinic with lectures and quizzes, case reports	90
Surgery—Clinics, with case reports; lectures and quizzes	90
Eye, Ear, Nose and Throat—Lectures, quizzes and case reports	126
Neurology—Lectures, quizzes and clinics	90
Practice of Osteopathy—Lectures, quizzes and clinics	90
Applied Anatomy (Osteopathic)—Lectures, quizzes and dissection	90
Physical Diagnosis—Clinical	54
Laboratory Diagnosis	36
Osteopathic Mechanics—Laboratory and lectures	18
Principles of Osteopathy—Lectures and quizzes	90
Obstetrics—Lectures, quizzes and clinics (reports required)	90
Skin and Venereal Diseases—Lectures and quizzes	45
Pediatrics—Lectures and quizzes	45
Pathology—Lectures and laboratory quizzes	126
Bacteriology—Laboratory	36

"The above is an outline of recommended courses from which the students may choose. Other subjects are available.

"The courses are extensions of the regular work as outlined in the first three years, and are given at the option of the student. Each student in the fourth year is required to elect at least twenty hours per week of lectures in clinical branches besides laboratory work. The course extends five months, making a total of 560 hours in addition to the laboratory work. Original work must be presented on some subject assigned by the Faculty, the results to be embodied in a thesis."

In the latter year book is inserted an interesting comparative table of what is taught in the "old schools" and the osteopathic schools.

I give it in full, with some comments from the same source upon it.

"Instead, as in the old school medical colleges, of studies relating to drugs and their administration, the osteopathic student has Principles and Practice of Osteopathy and Osteopathic Diagnosis.

"Beyond this, the subjects handled are the same, and a glance at the table of subjects below will show that the instruction given the students in this school is as comprehensive as that received by the students in the best of the old school medical colleges. The essential difference lies in the different presentation."

SUBJECTS RECOMMENDED BY THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.	SUBJECTS TAUGHT IN THE AMERICAN SCHOOL OF OSTEOPATHY.
Histology	Histology
Embryology	Embryology
Osteology	Osteology
Anatomy	Anatomy
Physiology	Physiology
Chemistry and Toxicology	Chemistry and Toxicology
Materia Medica	*Principles of Osteopathy*
Pharmacology	*Osteopathic Mechanics*
Therapeutics	Comparative Therapeutics
Bacteriology	Bacteriology
Pathology	Pathology
Medical Zoology	*Medical Biology*
Clinical Microscopy	Clinical Microscopy
Physical Diagnosis	Physical Diagnosis
	Osteopathic Diagnosis
Practice of Medicine	*Practice of Osteopathy*

Subjects Recommended by the Association of American Medical Colleges.	Subjects Taught in the American School of Osteopathy.
Surgery	Surgery
	Applied Anatomy
Obstetrics	Obstetrics
Gynæcology	Gynæcology
Pediatrics	Pediatrics
Eye and Ear	Eye and Ear
Nose and Throat	Nose and Throat
Mental and Nervous Diseases	Mental and Nervous Diseases
Electro-Therapeutics	Electro-Therapeutics
Genito-Urinary Diseases	Genito-Urinary Diseases
Dermatology and Syphilis	Dermatology and Syphilis
Hygiene and Public Health	Hygiene and Public Health
Dietetics	Dietetics
Medical Jurisprudence	Medical Jurisprudence
	X-Radiance

In dealing with this table, the year book says:

"Osteopathy is based upon the belief that health depends upon the structural integrity of the body, and that disease is caused by bony or muscular lesions.

"Medicine is based upon empiricism, except in the cases where disease is caused by germs. The osteopathist believes that health can be restored by correcting the anatomical lesions. The medical man has learned by experiment that certain nerves can be affected by certain drugs, so, to cure disease, he introduces these into the stomach, the blood becomes impregnated with the drug, it is carried to the affected nerve, as well as to every other nerve in the body. This is why the osteopathist is so strongly opposed to drugs—they may stimulate or inhibit the desired nerve, but what do they do to all the rest? Of course, the anatomy studied is the same in the different schools, but it is taught much more thoroughly and minutely in the osteopathic schools. The osteopathist must use his anatomy every day, while the medical man forgets most of his as soon as he has passed his last examination. The study of symptomatology, of course, is entirely different, as the two theories of disease are radically different. The medical student has to study materia medica, the nature and effect of the drugs used in his practice. This the osteopathic student does not have to learn, but he has instead the Principles and Practice of Osteopathy. This is a much more subtle and intricate subject, and requires the most careful teaching. The technique of an osteopathist is quite as complex and infinitely more important than that of the most highly trained pianist.

"Beyond this, the subjects treated are the same, but the basic difference in principle gives an entirely different viewpoint, even with the same subjects taught from the same text-books, so that an osteopathist could not possibly get adequate training in a medical school."

This statement is, as are almost all the osteopathic pronouncements, based upon the idea that medicine as generally understood is bounded by the use of drugs, and that it sees nothing else and ignores the fact that at present osteopaths are being taught the uses and effects of drugs.

The Kansas City College of Osteopathy year book says:

"While it is true that most of the subjects taught in an osteopathic college are identical with those taught in a medical college, in the latter the whole thought is flavoured with the deep-seated, centuries-old prejudice for the superstition of drug therapy."

The Chicago College of Osteopathy year book says:

"Anatomy, of course, is fundamental, or should be, to a thorough understand-

ing of disease, or better still, disordered anatomy. But the simple fact that the drug schools do not fully recognize this truth, and place their faith in a blind belief in drugs, has been the primary cause of the public's lack of faith in the medical schools, and this fact is also the reason why the demand of prevention, palliation and cure has not been met by the older schools.

"Likewise, in physiology, pathology and chemistry the osteopathic school thoroughly appreciates the many facts gleaned by the other schools, but again it is the interpretation, correlation and application of these facts that is frequently different."

I do not think that the statements I have noted can be fairly said of modern medicine. Sir William Osler has, I think, given very clearly the attitude of medical men at the present time, and his remarks about diagnosis might, with propriety, be pondered by osteopaths as well as others.

Diagnosis, not Drugging.

He says (p. 190): "In the fight which we have to wage incessantly against ignorance and quackery among the masses, and follies of all sorts among the classes, diagnosis, not drugging, is our chief weapon of defence. Lack of systematic personal training in the methods of the recognition of disease leads to the misapplication of remedies, to long courses of treatment when treatment is useless, and so directly to that lack of confidence in our methods which is apt to place us in the eyes of the public on a level with empirics and quacks."

New School of Medicine:

"The nineteenth century has witnessed a revolution in the treatment of disease, and a growth of a new school of medicine. The old schools—regular and homeopathic—put their trust in drugs, to give which was the alpha and omega of their practice. For every symptom there were a score or more of medicines—vile, nauseous compounds in one case; blank harmless dilutions in the other. The characteristic of the new school is firm faith in a few good, well-tried drugs, little or none in the great mass of medicines still in general use.

"Imperative drugging—the ordering of medicine in any and every malady—is no longer regarded as the chief function of the doctor.

"The battle against polypharmacy, or the use of a large number of drugs (of the action of which we know little, yet we put them into bodies of the action of which we know less) has not been brought to a finish.

"One of the most striking characteristics of the modern treatment of disease is the return to what used to be called the natural methods—diet, exercise, bathing and massage. There probably never has been a period in the history of the profession when the value of diet in the prevention and the cure of disease was more fully recognized."

But I do not think the matter rests entirely upon theory. In practice, the more advanced osteopaths have, as I have shown, laid down courses of study which differ hardly at all from those of our present medical schools. What is called the fundamental difference in viewpoint hardly exists in fact, or if it does, there seems to be no harm in a person possessing knowledge of both. But osteopathy has so modernized its system that the difference has almost disappeared.

"Osteopathy as a school of practice takes no stand for or against vaccination or serum therapy." (Kirksville College year book, p. 47.)

"In every case surgery is the complement of osteopathy. . . . Hence the comparatively thorough course in the subject given by the American School of Osteopathy." (Ibid. pp. 59, 60.)

The Los Angeles College has a course of Pharmacology and Materia Medica, to which 196 hours are devoted, described in its year book thus:

"This is a didactic course, covering the physiological and pathological action of drugs." (P. 29.)

But the most important fact of all is that the best osteopathic colleges have in fact recognized that they must provide the usual medical education and be recognized by State Medical Boards as doing so.

The American College of Osteopathy in Kirksville, Mo., has now a course on the action of drugs and on comparative methods (p. 1,184).

The Philadelphia College of Osteopathy thus refers to its action:

"In order that the graduates of an osteopathic college may be admitted to the examinations for license to practise osteopathy in New York State, it is necessary that the college be 'registered' under the rules and regulations of the New York State Education Department, and in order to qualify for 'registration' it is necessary to have an entrance requirement in accordance with the rules of the Board of Regents of New York State, to maintain a four-year course of study, to have six full-time instructors, and to have at least fifty thousand dollars invested in the institution. When this college was registered six years ago it was unable to comply with the above requirements in respect to six full-time instructors and the financial requirement of $50,000.

"With the closing of the term of 1914-15 registration was withdrawn as these requirements had not been met, and as a result the college was not registered in New York State during the past year. The college expects to meet the requirements in every respect before the beginning of our next term in September, and it is conducting its campaign for studies on this basis."

The Chicago College of Osteopathy was registered as providing a course valued as a four years' course by the Board of Regents of the University of New York on the 2nd December, 1915.

The importance of this step, desired in Philadelphia and accomplished in Chicago, is that medical schools to be registered in New York State require as a minimum course the following:

Subjects.	*Year.*	*Hours.*	*Year.*	*Hours.*	*Year.*	*Hours.*	*Total.*
Gross Anatomy	I	330	II	150	....	....	480
Histology	I	120	....	....	....	....	120
Embryology	I	60	....	....	....	....	60

The laboratory requirement of the above hours shall be:

Subjects.	*Year.*	*Hours.*	*Year.*	*Hours.*	*Year.*	*Hours.*	*Total.*
Gross Anatomy	I	240	II	90	....	....	....
Histology	I	90	....	....	....	....	....
Embryology	I	45	....	....	....	....	....
Physiology	I	90	II	120	....	....	210
Organic Chemistry	I	90	....	....	....	....	90
Physiologic Chemistry	I	90	II	60	....	....	150

The laboratory requirement of the above hours shall be:

Subjects.	*Year.*	*Hours.*	*Year.*	*Hours.*	*Year.*	*Hours.*	*Total.*
Physiology	I	60	II	90	....	....	....
Organic Chemistry	I	60	....	....	....	....	....
Physiologic Chemistry	I	60	II	45	....	....	....
Bacteriology	I	70	II	45	IV	15	130
Pathology	..	....	II	210	III	60	270

Laboratory requirement of the above hours shall be:

Subjects.	*Year.*	*Hours.*	*Year.*	*Hours.*	*Year.*	*Hours.*	*Total.*
Bacteriology	I	60	II	30	....	....	....
Pathology	..	....	II	180	III	45	....
Surgery	II	90	III	180	IV	240	510
Pharmacology and Therapeutics.	II	90	III	120	....	....	210
Dietetics	II	....	....	....	IV	15	15
Internal Medicine	II	55	III	270	IV	360	685
Physical Diagnosis	II	30	....	....	....	....	30
Obstetrics	..	....	III	90	IV	30	130
Gynæcology	..	....	III	30	IV	30	60

Six obstetric cases in either the third, fourth or hospital year.

Subjects.	*Year.*	*Hours.*	*Year.*	*Hours.*	*Year.*	*Hours.*	*Total.*
Hygiene	..	....	III	60	....	....	60

Subjects.	*Year.*	*Hours.*	*Year.*	*Hours.*	*Total.*
Eye, Ear, Nose, Throat, Dermatology	III	40	IV	120	160

	Year.	*Hours.*	*Total.*
History of Medicine, The Ethics of the Medical Practitioner, Medical Jurisprudence, Medical Economics	IV	30	30

General totals, 850 hours each year.

Additional light is thrown upon this approximation of medical and osteopathic colleges by a comparison furnished to me by the Chicago College of Osteopathy of the number of hours allotted to various studies by that college and four medical colleges in Chicago:

	Rush Medical College.	North-Western Medical.	Illinois University Medical.	Chicago College Med. & Sur.	Average.	Chicago College of Osteopathy.
Physics	300	300	144	288	258	54
Chemistry	480	480	272	384	404	324
Biology	180	180	144	192	174	72
Medical Subjects.						
Histology	....	128	288	128	136	180
Anatomy	660	528	416	592	549	804
Physiology	180	280	272	272	251	252
Embryology	60	128	....	80	67	90
Phys. Chemistry	120	400	128	160	202	180
Pathology	180	346	272	352	287	216
Bacteriology	90	128	144	144	126	180
Physical Diagnosis	....	128	48	64	60	72
Hygiene	....	16	112	32	40	72
Autopsies	....	50	64	32	36	72
Gynæcology	90	224	102	192	152	216
Genito-Urinary	90	96	72	64	80	72
Roentgenology	....	16	4	16	9	36
Surgery	480	552	440	566	509	388
Obstetrics	180	152	196	192	180	432
Jurisprudence	30	....	16	32	19	18
Eye, Ear, etc.	160	408	124	160	213	144
Pediatrics	....	208	128	128	154	90
Neurology	....	160	100	160	140	270
Dermatology	....	96	66	80	60	72
Orthopedics	....	....	84	80	41	54

	Rush Medical College.	North-Western Medical.	Illinois University Medical.	Chicago College Med. & Sur.	Average.	Chicago College of Osteopathy.
Medical Subjects.						
Medicine	330	256	260	432	319	360
Laboratory Diagnosis	....	....	64	....	16	180
Anesthesia	....	....	....	16	4	36
	....	....	....	32	8	18
Tropical Diseases	....	....	....	64	16	....
Psychiatry	....	....	24	....	6	....
Hydrotherapy	....	....	....	....	....	36
Dietetics	....	....	....	....	....	36
Corrective Gymnastics	....	....	....	....	....	36
Antisepsis	....	....	....	....	....	18
Clinical Diagnosis	....	....	....	96	24	....
Elective	450	....	....	....	112	....
	4,060	5,260	3,984	5,030	4,652	5,080
Therapeutic Subjects.						
Pharmacology	60	272	176	160	142	....
Materia Medica	....	....	244	64	77	....
Pharmacy	270	30	....	388	172	....
Therapeutics	....	220	64	64	87	....
Serology	....	....	....	16	4	....
Rx. Writing	....	....	16	....	4	....
Chemistry of Drugs	30	....	....	....	7	....
	360	522	500	692	493	....

Osteopathic Therapeutic Subjects.	
Clinic Treating	360
Osteopathic Diagnosis	180
Technique	270
	810

In the appeal issued by the American Osteopathic Association for an endowment fund for the A. T. Still Research Institute, the following appears:

"In its development to the present, Osteopathy has relied upon its own resources. The point is now reached where this will not suffice. If it is to meet the demands created by its very success, it must expand the scope of its activities far beyond their present limits. The specific needs arising from this situation are of two sorts: those relating to the scientific side of osteopathy, calling for research, and those relating to the professional side, calling for post-graduate training.

"These needs can be met only as the most modern equipment and the most efficient methods are made available for the advancement of scientific knowledge and the higher training of practitioners and teachers. For these purposes there should be provided a scientific and educational institution of the highest class, in which not only may Osteopathy contribute its share of investigation into the generally recognized problems of disease, but more especially where the many new problems raised by Osteopathy may be worked out to the benefit of society through their more efficient application in osteopathic practice."

"*The Three Departments*:

"Its three essential features should be research laboratories, post-graduate school and hospital. We can do something worth while with all these housed in one

building. We can do more with the hospital as a separate building. But for the highest attainment and widest usefulness each of these departments should have its own building with suitable accessory structures. The measure of realization in this regard depends upon the size of the endowment fund.

"*Research*:

"This department should be equipped with laboratories for investigation in subjects as follows:

"Anatomy and anatomical mechanics, biology and physiology, physiological chemistry, pathology, bacteriology, X-ray and photography, microscopy, osteopathic technique, library, public hygiene and prevention of disease.

"Supplementing these would be dissecting rooms, pathological museum, and quarters for animals.

"These laboratories should be equipped in the most complete manner so that no sort of investigation may be barred by lack of facilities; and so that the work done in them may be efficient and of a high order scientifically, and, therefore, practical and productive.

"*Post-graduate Work*:

"This department should provide for the systematic imparting to members of the profession of the results achieved in the research department, together with such special and advanced instruction in osteopathy, surgery, and special subjects as will train students for special practice and for research and teaching. This department should be so well equipped that osteopathic physicians will be eager to secure the benefit of advanced study and training under such favourable conditions. The problems involved in the safeguarding of the public health, and in the social side of disease prevention are so closely related to the welfare of society that this function of the practitioner should be adequately provided for. In co-operation with the research department any member of the profession may pursue lines of investigation in which he may have special interest, and the Institute would officially recognize the scientific work of such practicians and professors as are achieving unusually good results in a specialty. This recognition would help them to devote more and more time to their specialties and thereby more effectually develop improvements in methods of treatment. On the other hand, lectures and conferences, held throughout the country in osteopathic centres, constituting a sort of university extension system, would serve to take to the members of the profession the new things, the advances in knowledge and practice. The final result of all the work of the Institute should be better physicians.

"*Hospital*:

"This would be related to each of the other two departments. It should include general osteopathic, children's, obstetrical and surgical clinics, and isolation wards for contagious diseases. One section should be arranged and equipped with special reference to the scientific study of disease by the research department. Another section should serve primarily as a clinic for the post-graduate students. In addition to these, ample provision should be made for private cases, to enable the patrons of osteopathy anywhere in the country to secure the best in skill and science that Osteopathy affords."

"*The Plans Matured*:

"This is not a new idea in the profession. The need of such an institution has been realized from the earliest beginnings of osteopathy. The organization of the Institute by the American Osteopathic Association dates from 1907. In this time the profession has realized what it wants to do and has matured and perfected its plans. It is a movement of the entire profession, which has shown its faith and its determination by contributing from its daily earnings to the nucleus of an endowment fund. The income from this fund has been carefully used to the best advantage that circumstances would permit. Committees of the Institute have directed various lines of investigation. Individuals, both in and out of colleges, have taken up special lines of research on their own motion, devoting such time as could be spared from teaching and practice, in animal experimentation and other laboratory work. To these have been appropriated from the income fund small sums, $100 to $300 each, to cover in part at least the actual expense of their work."

From the above it will be seen that the American Osteopathic Association recognizes that up to the present time Osteopathy lacks the facilities, technical and otherwise, to solve the problems which it says its system raises.

To quote again:

"Naturally, no research work had ever been done having any direct bearing along these lines. Other scientific institutions and laboratories devote their time and energies to problems coming down to them from medical tradition, and are working along lines entirely foreign to the principles of osteopathy. Therefore, it is an absolute necessity that osteopathy should be enabled to work out the problems of far-reaching importance and deep significance which it has raised, under its own auspices and using its own men and laboratories."

In addition to these definite statements and actions it may be noted that in the official Journal of the American Osteopathic Association the tendency I have noted and the change in the viewpoint is brought forward in many ways.

In his presidential address made at the Convention of Osteopaths held at Kansas City in July and August, 1916, Dr. O. J. Snyder, said (p. 8):

"We are not raising here an issue as to what osteopathic practice should or may embrace—whether under certain conditions the administration of drugs may not be desirable, even imperative. But we are justified in reminding our colleges that their prime function is the teaching of the principle and practice of osteopathy, and without thorough prosecution of this work they cannot faithfully fulfil their obligations."

In the editorial of the issue of the Journal of September, 1916, commenting upon the "spirit of the 1916 meeting," reference is made to the two previous annual conventions in Philadelphia and Portland, thus:

"Sentiment at Philadelphia (1914) was intense for the promulgation of the osteopathic truth. So intense, in fact, that it crystalized in an undertaking to enforce this by resolutions and by prohibition. The report was that heresy was widespread and increasing; that osteopathy was not being taught and other subjects and methods were supplanting it. There was an alarm at the door, and it must receive immediate attention. The result was the adoption of the resolution, well intended but it appeared later ill advised, in that it does not get at the subject from the right angle.

"A year later (1915) at Portland the sentiment may have been equally strong regarding the fundamental principle of osteopathy, but it was equally against trying

to enforce the acceptance of principles by majority vote. A year had passed by in which to consider the situation more carefully and the effect of the action of the previous meeting. The feeling which took tangible form at Portland in the repeal of the action of the previous year was that we must establish the practice of osteopathy through education, and not through rules and regulations.

"Kansas City stakes off another twelve-month, a year in which there has been much discussion, some of it senseless, harmful and unnecessary, but the year has given an excellent opportunity to view the situation calmly and plan for the future. Especially has it given an opportunity to study it from the college viewpoint, and certainly without that consideration no duty of the situation would be adequate or complete. While we may say that the profession belongs to the men and women in practice, who are making it and making the reputation which creates its valuable asset, we cannot, if we would, forget our responsibility to the colleges.

"The existing colleges, our present educational system, are the direct successors of these, and profit by the trail of good and suffer for the bad which these early institutions left. With raised restrictions making the struggle for existence more difficult, self-elimination among the colleges has gone on until now we find seven such institutions. Happily these, with one or two exceptions, have gone upon the basis of educational institutions, and individual proprietorship with them is no longer a condition with which to contend.

"The real feature of the meeting is that the colleges and the members of the Educational Committee present agreed upon a schedule which meets the state laws in the strictest states, and yet sets conditions which the colleges say they are ready to meet, and which other colleges say they will try to work toward. When this is accomplished our educative system will, for the first time, be adequate to the state laws. Now the work is to make them adequate to the needs of making osteopaths such as the profession demands.

"What are the demands of the profession for future osteopathy? Naturally, men and women successful in practice think that what they practise is about right, and naturally their ideal is that those who come out should practise about as they do. It is safe to say that nine-tenths of the osteopaths who attend meetings, whose influence is felt, who give character to the profession, do not use drugs in their practice, and no doubt most of these believe that drugs have no place in our work. This sentiment was as pronounced at Kansas as at any meeting in recent times.

"To insure this condition in practice some propose to go further and forbid teaching concerning the use and effect of drugs, serums and vaccines in the schools. Unfortunately, not to teach drugs is no guarantee that the students will not want to resort to drugs—or will resort to them in practice. Most of those who mix in drug therapeutics have no adequate training for it. The schools report there is a demand on the part of many students for a knowledge of materia medica, and especially pharmacology. At least one of our colleges maintains that as the law stands in the state in which it is located, it must teach these subjects.

"Our personal conviction is that drugs for therapeutic effect have no place, theoretically or practically, in our system. But we are equally sure that if we make both for school instruction and practice, a certain standard of osteopathy the test rather than entire elimination of drug knowledge, we shall be accomplishing vastly more. Putting the essential thing into our training is more to the point than keeping the unnecessary out. Let the standard be established on the positive basis.

"We have the right to demand a certain amount of learning and experience as a condition of graduation. Have we the right to demand that it shall end at a

certain point, that it shall not exceed an established minimum? Go further and assume, for the sake of argument, that we have the right to say the practice shall *not* be so and so, but shall be as mine is. Have we any evidence that those graduating under a course which includes pharmacology, or that those who in other colleges, through private classes, get a course in pharmacology will practise drugs? Some of the colleges say not, and demand that they be given a chance to prove that the action of drugs can be taught, a rounded medical education given, and the faith of the osteopath in osteopathy and his reliance in it increased.

"That is what all at the recent meeting seemed agreed on—need of osteopaths with an increased knowledge of osteopathy and the fullest confidence in its therapeutic value. There seems not a shade of difference of opinion about this being the present need. The point is, how to secure the desired end? We should realize that conviction in osteopathy on the part of those entering it as a profession comes as the result of investigation by comparison of theory and results with other systems, and less through accepting it on sentiment because of what it did in one individual case, as was true of those who took it up fifteen or more years ago. It may not be unreasonable to assume that the essential facts in pharmacology and perhaps in materia medica taught from the correct viewpoint may be a strong factor in convincing the osteopathic student and grounding his faith. This article is no argument for this teaching. We have all these years fought against it. It is an argument for fairness to the colleges. The colleges are not an end. Education is not an end; both are means to the end—competent osteopathic physicians. They are the result, the fruit of our educational system. We must judge the system by the fruit. They have not yet borne fruit. To judge before they bear fruit is prejudice. If this should be taught, however, we hope it will be done under the heads of toxicology and comparative therapeutics, where, as far as they enter into an osteopathic course, they belong. And if taught, they should be taught by real believers in osteopathy and not by believers in drugs.

"We believe the report of the Board of Trustees along this line had some very wholesome suggestion, and we urge its careful reading upon every member. If an osteopath is so thoroughly grounded in osteopathy, and we know him to be such, that we cannot question his loyalty to its philosophy, then we must grow to the point where we will give him the liberty of treating an individual case as his judgment and experience indicate it should be treated, provided we know that he has had the training so that he knows what he is doing."

The colleges represented at that meeting (and the others not present are said by the Secretary of the Association to be pretty close together) recommended that beginning 1st July, 1917, the following requirements be insisted upon, and their report was adopted:

Requirements for Matriculation.

"The minimum requirements for matriculation shall be: 'A diploma from a high school course or its equivalent education, together with satisfactory proof that the applicant is the lawful holder of such diploma and that the same was procured in the regular course of instruction.'

"In lieu of said diploma the applicant may submit satisfactory evidence of any of the following:

"(*a*) A certificate from the college entrance examination board, of the college examining board of any State or territory whose standard of educational requirements is equivalent to that of a standard four-year high school as stated in the

paragraph above, showing that such applicant has successfully passed the examination of said board.

"(*b*) The passing of an examination before the entrance examining board for entrance to the academic department of any State university or foreign university of equal grade, or the possession of documentary evidence of admission to the academic departments of such institutions as a regular student."

COURSE OF STUDY.

"The course of study shall cover four calendar years of not less than thirty-two weeks each year, and at least ten months must have intervened between the beginning of any course and the beginning of the preceding course.

"Eighty per cent. of actual attendance in all the subjects of the course shall be required, and each student must have a passing grade in each subject. Seventy-five per cent. on final examinations shall be the minimum passing grade. Final examination papers must be kept on file for at least one year, and shall be open to inspection by any duly appointed agent of the A. O. A.

MINIMUM REQUIRED CURRICULUM.

Anatomy	600
Physiology	300
Biology	64
Pathology	250
Embryology	60
Histology	160
Chemistry	320
Bacteriology	160
Hygiene	45
Dietetics	32
Principles of Osteopathy	80
Osteopathic Technique	160
Hydrotherapy	16
X-Ray	32
Osteopathy, General Diagnosis and Treatment	1,200
Ear, Nose, Throat	60
Eye	60
Surgery	320
Gynæcology	145
Obstetrics	150
Jurisprudence	6
	4,320

I have made these lengthy extracts in order to show just what is the meaning of the period of transition through which osteopathy in the United States is passing.

I add a few more to illustrate it still further:

"Let the word *education* be our key—not alone for our college work, but for our associated efforts. The great object is to take the student, and the practician who has not seen the vision, to a point where he can see osteopathy. Formerly, he could get a vision of it in two years, because he was determined to get a view of it. He knew he wanted that view. He had seen those who had the view and he knew their earnestness and singleness of purpose and their success. Later it has required more time, as we ourselves contributed and as other sciences have contributed, much which must be incorporated in the study of osteopathy—and as osteopathy widens into the common ground with other systems of practice, and particularly as other forms of practice become less

characteristically drug systems and approach our own, it requires a longer time for the student to get the vision clearly.

"Then again the profession needs a revival." . . . "We are not putting osteopathy first as we once did."

(Editorials in Official Journal, October, 1916.)

"Then to meet the demand from without and within the profession our schools have gradually extended the course of study and have raised the entrance requirements which, of necessity, places financial burdens upon the colleges taking this step.

"The colleges are not doing this for their own gain or glory. Naturally they would prefer to accept only well prepared matriculants, and they would prefer to keep them long enough to make the best possible physicians of them, but the extension of the course came from a desire to render osteopathy the highest service and to qualify the graduate for entrance requirements in the State. Practically all State legislatures have aided in bringing public opinion to that point where nothing less than the equivalent of a high school education and four years of technical study is recognized as equipping men and women for the practice of the healing art. Two courses were open to us, to continue on the three-year basis and accept regulation as a specialty, or meet conditions imposed for general practice.

"In going upon the four-year basis the colleges do not in any sense discredit the work which they were able to do for the student in a three-year course. It has been a natural progression. True, the three-year course has been crowded, and perhaps that was not sufficiently long to round out a student for the duties and responsibilities of practising the healing art. And yet no one would deny that competent practicians can be made in a three-year attendance at the best of our colleges. No doubt much better physicians can be made with another year of preparation, so that the raise to the four-year course has been partly to give the best educational advantages possible and partly to meet public sentiment and State laws. That the condition which the colleges have now imposed upon themselves greatly increase the standing of osteopathy, and the value of every competent practician's license, will not be questioned. In justice to the solidarity of the profession the fact should be recognized that it is to our benefit that these changes, expensive, and even hazardous to some of the colleges, are made by them.

"If the activity of the profession is directed in favor of the colleges which are meeting these conditions, and if our activity makes it possible for these colleges to maintain the advanced ground they have taken, there is the assurance to the other colleges which may not have seen their way to take this advanced standing, and which we have every reason to believe they wish to take as soon as they can see the income necessary toward carrying it out.

(Editorial in Official Journal, December, 1916.)

"Other commendable decisions of the last convention mean much also to the foreign policy of osteopathic development. For instance, a closer fellowship of our colleges in the direction of regulating education. The very serious and staggering criticism that our colleges exist for personal financial gain has interfered largely with the scientific reception of our theory. For the good of osteopathy in general this must change.

(Correspondence from President of British Association, Birmingham, England, December, 1916.)

"That osteopathy has not grown as it should have grown in the past few years is due to the lack of earnest support shown in the college growth by the rank

and file of the profession. This interest has not been alive for the reason that those who have best succeeded in almost every community have done so through straight osteopathic work. And when they suspect that that character of work is not still being done by the colleges they doubt the efficiency of any other and do not interest themselves as they did ten years ago in making the colleges grow.

"The colleges may not be altogether to blame for the condition of affairs which has come about. Our educational system has been passing through a formative period, shifting from a two-year to a three-year and on to a four-year course, and likewise restrictions to the matriculants through raising the entrance requirements. It has been necessary to add much material to the present course which changes it considerably when compared with the old two-year course. The remodeled course also changes considerably the viewpoint of the graduate as to his line of practice, and the graduate under the two-year course which was definite and specific training along certain lines, seeing the difference in the attitude between himself and the newer graduate, believes that the latter is not as genuinely osteopathic and withholds his active support and approval from the colleges."

(Editorial in Official Journal, February, 1917.)

Diagnosis has been Practised as an Art Rather than as a Science.

"There have been those among us in days gone by who contended that our particular spinal diagnosis should be all-sufficient, minimizing the advantage of physical and microscopic diagnosis. Happily, that time is past. We are now reaching out in all directions for every diagnostic advantage. If the older schools have in their splendidly-equipped laboratories developed new methods, I maintain that we have a right to adopt them and make them our own. Pride and prejudice have too often spoiled the career of men. We must avoid the pitfalls of these arch-enemies of success. What if sero-diagnosis did happen to be a by-product of a decaying medical school's effort to acquire a new therapeutic agent? Serum-therapy has been a failure but sero-diagnosis is not and it belongs as much to the osteopath as to the allopath. To-day even the layman talks of blood-pressure tests and blood analysis as most important in the determination of certain diseases. No osteopath in the twentieth century will lack the equipment to determine either the blood pressure or the blood current."

"Osteopathic diagnosis has been, in the hands of all too many of our practicians, an art rather than a science, through no lack of principle and exposition but because our colleges were not alive to the fact that the impetus given to the mastery of our mechanics under the tutelage of the founder himself was lacking in some of his successors.

"The twentieth century osteopathic student must early in his career determine whether his field will be cosmopolitan or provincial, for in our cities the general practitioner is passing and the day of the specialist is approaching. We have already in our ranks specialists in diseases of the eye, ear, nose and throat, dermatology, gynæcology, obstetrics, acute infections diseases, pediatrics, orthopedic and major surgery."

(Address, Edythe F. Ashmore, D.O., before the Osteopathic Society of Greater New York, February, 1917.)

As an additional interesting and confirmatory fact, it may be mentioned that in Ohio the osteopaths, having secured special provision for their own system and exemption from the regular medical examinations, have now insisted

upon and obtained the right to administer narcotics, although it was part of their original theory that drugs were anathema.

In *Osteopathic Health,* published in Chicago, June, 1915, it is said: (p. 2):

"Now the osteopathic physician makes exactly the same examination as the surgeon, but in addition he makes another examination that is peculiarly his own."

In *Osteopathy,* published by the American Osteopathic Association, and written by Percy H. Woodall, there appear the following statements (p. 86):

"The time spent in acquiring a medical education is usually four terms of seven months each. The osteopathic course requires, as a minimum, three years of nine months each, and some of the schools require four terms of eight or nine months each.

"The American Medical Association requires a minimum of four thousand hours' work in the four terms. The American Osteopathic Association requires a minimum of three thousand, seven hundred and thirty-one hours of work in the three terms."

(P. 88.) "Those schools which maintain the four-term course require nearly five thousand hours' work. If the greater amount of time devoted to bacteriology and surgery in the medical colleges be considered, it will be found in the main that there is but little, if any, difference in the number of hours required by the two schools of treatment, and several osteopathic colleges actually give a longer course than is required of medical colleges.

"The impression that the doctor of medicine is better educated to care for the sick or to give advice in matters of illness than the doctor of osteopathy is erroneous. The subjects taught in the two schools are practically the same, except that the osteopathic physician, disbelieving the curative power of drugs, devotes little study either to materia medica or to pharmacology. He substitutes for these the principles and practice of osteopathy.

(P. 93.) "It must now be clear to the unprejudiced mind that the osteopathic physician is the peer of any. He makes his own diagnosis after an examination that is unique in its thoroughness. His knowledge of the body and of diseases is thorough and complete; his manipulative skill is equal to that of the most dexterous surgeon. His education is thorough, comprehensive and practical. In addition to the latest medical ideas and theories regarding the causes, diagnosis and treatment of diseases, he has his own distinctive and peculiar methods. He rejects only that part of medical teaching that has failed in results and applies instead of these unreliable methods others that are trustworthy, harmless, scientific and demonstrable. Osteopathy is not something less, but something more than medicine."

The American Osteopathic Association has, in co-operation with the Associated Colleges of Osteopathy, as I have pointed out, endeavoured to standardize the colleges and the courses of study to be pursued. But their standard as shown in the appeal for an endowment fund for the Still Research Institute falls short of the requirements of New York State, both in regard to staff and length of course, while its monetary strength is in "resources" of $50,000 instead of, as in New York, "apparatus, equipment and resources of $50,000." They omit altogether any provision for six full-time salaried instructors; provide a three years' medical course each of thirty-six weeks, instead of a four years' course of seven months each, and do not require for admission the usual four years of academic or high school preparation.

It must be obvious that osteopathy has, in theory and intention at least, gone a long way in the direction of higher and more scientific medical education.

Whether it has done it in truth depends, of course, on how its curriculum is carried out and what standard is in fact set by students and teachers. This I cannot pronounce upon, but there can be no doubt that if osteopathy is to be dealt with at all, it must be treated upon the basis that its pretensions are seriously meant and that it is preparing to make use of the modern methods of education, even where they appear to trench upon the formulæ which its originator prescribed.

Among the documents submitted with this Report will be found an address by Mr. Abraham Flexner before the Governor of the State of New York in 1914, in which he pointed out the objections which the General Education Board of that State had to the proposed Bill then before the Governor for signature, giving osteopaths the rights of regularly qualified physicians. It is full and comprehensive on the subject.

I may add that I gave those representing the osteopaths in Ontario an opportunity of dealing with the statements made by Mr. Flexner in his general report in 1910, which he repeats in this address. Advantage was taken of this opportunity, and the result will be found in sworn statements before me as Commissioner, included in the proceedings before the Commission, and in certain affidavits then produced, which are submitted with this Report.

I do not think that I am bound to adopt every line or letter in Mr. Flexner's Report, but it must not be forgotten that his statements are, as given in the introduction to the Report, verified by the data in possession of the American Medical Association, likewise obtained by personal inspection, and go forth with the sanction of at least two, and frequently more, independent observers. But, after all, if the Report has any value at all, it must be found in the reasoning upon which its conclusions are based—in other words, its intrinsic reasonableness.

I have given the fullest weight to these affidavits, which in some respects establish the particular point at issue. But I do not see that even the improvement in specific equipment mentioned in those statements and affidavits entirely answers the indictment made against these colleges as to their efficiency in 1910.

On the clinical side they, or the statements made by the deponents, reveal a situation which, if variety of experience and numbers of patients available for instruction is considered, is clearly entirely inadequate. As, for example, at the Los Angeles College the hospital had 15 beds (p. 1156), and in Boston 10 to 15 beds (p. 1160) and in a new building 20 beds. No hospital facilities existed at the Still College, Des Moines, in 1909 (p. 1178); the Littlejohn Hospital has 16 beds (p. 1644).

It should, of course, be added that osteopaths hold what may be described as out-patient clinics; that is, on those who come for treatment. In addition to Littlejohn Hospital, the students of the Chicago College of Osteopathy have access to Cook County Hospital.

The strongest fact is the statement made by the American Osteopathic Association in its appeal for an endowment fund, the admission by the Philadelphia College quoted from its year-book, and the application for and reception of registration by the progressive college in Chicago, as well as the total and absolute failure of osteopathy to make the smallest attempt in Ontario to develop and teach its theories.

Dr. Barklie, representing the Drugless Physicians, in his address before me said that during the last two or three years medicine was creeping into the osteopathic colleges, and added, "We do not wish this in Ontario."

At present, the United States Osteopathic Colleges, save one, or possibly two,

are unable to fill the requirements of the State of New York. It is a serious thing to propose the admission to practice of osteopaths who have graduated from colleges admittedly below that standard, when the best osteopathic institutions are voluntarily striving to attain a position enabling them to obtain what is practically equality with the best medical colleges. This is particularly important when those now seeking admission were educated while there was in many ways direct opposition to the most cherished and successful theories and practice of modern medical science.

In addition to the light thrown on this question by the curriculum of the different colleges, one of the principal colleges, i.e., the Chicago College of Osteopathy, has applied for and been granted recognition by the State Medical Board of New York. This in itself is an admission that osteopathy does not desire to be treated as a separate sect, but is anxious to be accredited as a fully-equipped medical school. And it could not secure this standing unless it fully conformed both in equipment and curriculum to similar medical colleges which have been accepted as first-class by that exacting and able State Board.

Dr. Downing, the Assistant Commissioner for Higher Education in New York State, said in his statement before me: "Candidates for a license to practice osteopathy must pass identically the same examination as that required of men who are seeking a medical license and who possess the degree of M.D."

In New York State and in Pennsylvania the examinations are not clinical examinations, and do not include therapeutics.

Dr. Chiles, Secretary of the American Osteopathic Association, said before me that the standard which has been achieved by osteopathic schools is equal to that demanded by the American Medical Association, and that a larger percentage of their graduates get through the California and New York State examinations than those from medical institutions.

Dr. Snyder, President of the Board of Osteopathic Examiners for the State of Pennsylvania, says that the course of study in the Philadelphia College of Osteopathy comprises practically all the subjects of a regular medical course and standard text-books such as are used by medical students, and that in anatomy, as prescribed in New York State, the students are taught in such a way that they will be able to pass that examination, the questions of which are not based in any way upon the osteopathic view. This is in general terms concurred in by Dr. R. B. Henderson, President of the Toronto Osteopathic Association (p. 329).

A very serious factor in the situation here is the circumstance that in the United States, until recently, there was no standard of preliminary education required before a pupil was admitted to an osteopathic college. Lately, this has been to a certain extent remedied, because many States will not examine students who have not the preliminary educational qualification.

But that does not meet the fact that those who have come here to practise did not need to show the possession of such a preliminary educational qualification before they graduated from the colleges in the United States.

The comment of Dr. Matson, Secretary of the Ohio State Medical Board, on this subject follows:

"Even to-day in the last announcement of the largest osteopathic school in this country, viz.: the American School of Osteopathy, Kirksville, Mo., there appears a statement in substance as follows: 'to be admitted to the freshman class applicants must produce evidence of an education equivalent to graduation from a recognized high school.' Immediately following this statement, in parenthesis, it is announced that, 'a student may be admitted conditionally on one

year's high school work, provided the condition is removed before entering upon the second year'—that is to say, a student may take one year of osteopathic work and three years of high school work in twelve months. Even following this statement the catalogue announces that a student lacking evidence of both may be admitted on examination. It is not stated by whom the examination is given, but it may be presumed that the officers of the school set the examination. Still following this statement is the announcement that the Trustees reserve the right to admit mature and well qualified students though they are unable to furnish the exact requirements specified."

An example of the difficulties now confronting osteopaths may be found in the fact that when the Philadelphia College of Osteopathy raised its requirements the immediate result was that the student body was reduced a great deal in numbers, and its income was thereby curtailed, so that in July, 1915, its registration by the New York State Board was cancelled.

The Still Research Fund is still on paper, although the effort to secure an annual contribution seems to have been successful (p. 1871).

I may add that those administering the law in the two States which divide up the different schools of medical thought, classify them and issue limited certificates, are not satisfied with it.

Dr. Matson, Secretary of the Ohio State Medical Board, thus gave his experience:

"The law has now been in effect nearly two years, but regardless of the fact that an agreement was reached with reference to the provisions concerning the practice, the chiropractors are not satisfied, and at the last session of the legislature sought to disconnect themselves from the jurisdiction of the department under which they now operate. We are, therefore, unable to state at this time whether the enactment shall be regarded as proper and in the interests of the sick—in fact, the only excuse we have to offer is, that some regulation is probably better than none, and that a makeshift only has been adopted. This is all probably due to the fact that in the beginning there was lack of one single educational standard for everyone who was to meet and treat the sick.

"Our law was modeled after the one in Pennsylvania, advantage being taken of the troubles arising from the administration of the law in that State. We are advised that provision has been made in the medical schools of Pennsylvania for a course to be given drugless healers in subjects up to and including diagnosis, after which they may present a diploma from a school representing the branch they desire to practice and be examined before the Board of Licensure. We have been officially advised, however, that there are no students attending the course provided."

Dr. Baldy, the President of the Board of Medical Education and Licensure, Philadelphia, says, regarding their system of classification and license, in which the osteopaths are not included, having a separate board, which system provides for no clinical examination:

Q.—Do you regard that as a satisfactory system?

A.—I will tell you how it has worked out. It has been in force for two or three years. Now, as an explanation of what has happened, I want to point out to you this: there is not a chiropractic school—take that as an illustration of drugless therapists—there is not a chiropractic school in the country with more than a one-year course. There has not been a single, solitary man who has taken that course I outlined in Pennsylvania. In other words, they do not want to; they want to practise medicine under cover of something else, and they want to

do that with a three-months or six-months or a one-year course. These people are not sufficiently earnest; they are not sufficiently honest, nor do they want to take a real course and really know something. Osteopathy has a four-year course. There is not an osteopathic school in this country that has a laboratory that is worth calling such. Our school in Philadelphia, I may say, is one of the best; it has a single laboratory in which it teaches merely inorganic chemistry superficially, and they admit that it is really a pretence, that they have to have it in order to get admitted to the State Board Examinations, and that is all they use it for. They have not the money to put in other laboratories."

I may add the opinion of Dr. Snyder, of Philadelphia, President of the Board of Osteopathic Examiners for the State of Pennsylvania—that the limited license is a dangerous procedure, because it will be exceeded, and the extent of the excess cannot be satisfactorily watched.

In conclusion, I view this part of the general subject in this way:

On the one hand, there is a system of medicine known and recognized in Ontario for over half a century. This system has to its credit the discovery of the anti-toxins for diphtheria, smallpox and typhoid fever. It has driven typhoid and tetanus from the fighting forces of the Empire. It has reduced tuberculosis and scarlet fever, and has substantially brought down the death rate among children. Its sanitary and public health laws have prolonged human life. Those who require to practise their own system of medicine without the training and study which those at present registered had to undergo in order to practise that system to which, speaking generally, the whole Anglo-Saxon world is committed, should, I think, be required to shoulder the onus not merely of asserting that certain theories will, if put in force, produce beneficial results, but of showing that refusal to allow them to practise upon their own terms will be a denial of real benefit to suffering humanity.

I think many of the arguments, presented with great ability by members of the medical fraternity, particularly at the sittings held on the 3rd and 5th days of November, 1915, may well be pondered by those who desire to realize the great responsibility of reducing in any way the volume of knowledge absolutely required by a student if he is to become a real factor in saving and preserving human life and health, or of even permitting him to remain ignorant of the extraordinary triumphs over disease achieved through the laboratory and scientific experiment.

This onus to which I have referred has not, I am satisfied, been met, nor has it been demonstrated that the boons offered will be any less real if accompanied by a liberal education in medical science as now practised.

The real issue comes down to this, that the osteopath and the chiropractor desires to put his theories into practice without entering by the same gate that others, also with theories upon the same subject, are compelled to pass.

It seems to me that anyone claiming such a right should be prepared to deal with things as they are, and be ready to suggest how his proposal can be worked into and made part of the present situation, rather than to adopt an irreconcilable attitude. He should also be ready, if need be, to stand by his views to the extent of being prepared to inculcate them into others, and not to require a change to be made based upon a system in which instruction is given and received in a foreign country.

Any change is bound to be far-reaching. The registered physician has benefited by the progress of medical science, and has inherited all that has been added in a medical way to our institutions.

In an action for damages the registered physician examines; under the Work-

men's Compensation Act he alone can examine the workman or act as medical referee. In all the legislation regarding the custody of the afflicted, etc., he is the only one mentioned, and he only can sign death certificates.

While the health of the individual is of extreme importance, the public health is equally to be safeguarded.

The Chief Officer of the Ontario Board of Health, Dr. J. W. S. McCullough, in his address before the Commission, after a reference to Osteopathy in its younger days, said: "The most important phase of medicine to-day is the prevention of disease. Prevention of disease is absolutely dependent upon a correct knowledge of the fundamental medical sciences. Unless one can correctly diagnose disease, constant mistakes will be made. Nowhere is this more true or more unfortunate than in connection with communicable diseases. Trained medical men sometimes make mistakes—how much more likely is this to happen to the untrained man? Closely related to diagnosis is clinical experience, only to be secured by the actual observation and handling of cases seen in general and isolation hospitals. How disastrous it is to fail to make an early diagnosis in the case of diphtheria, or, the diagnosis made, to neglect the use of diphtheria anti-toxin. Yet the medical sectarian and the drugless physician have not the education and training to make the diagnosis, and, since they deny the value of anti-toxin, which has reduced the death rate from this disease nearly fifty per cent., they allow the young patient to die. Many examples of this have been seen in this city in recent years.

"Who but well-trained physicians have discovered and given to the world the causes of tuberculosis, of malaria, of yellow fever, of typhoid fever, of cholera, of the plague, of typhus fever, of Malta fever, as well as of many others. The attempt at construction of the Panama Canal by the French was a failure because they could not overcome the ravages of malaria and yellow fever. This great work was successfully carried out after the cause of these diseases had been discovered. In possession of this knowledge, Colonel Gorgas made the Panama Zone as safe to live in as the City of Toronto, the healthiest city in the world. Who but a physician gave to the world a preventive against smallpox, so that this disease, which in confluent form is ravaging at the present time the islands of the Eastern Archipelago, is unknown in the Philippines, which were thoroughly vaccinated under the military rule of the United States. The Provincial Board of Health, by providing free preventive treatment of children and other persons bitten by rabid dogs, has been able to prevent the death from hydrophobia of some four hundred citizens of the province in the last five years.

"In the Boer War of fifteen years ago, in an army of 328,241, 14,626 were inoculated against typhoid fever. Although the preventive treatment of this disease was then in its infancy, there were but 163 deaths among the inoculated men, while in those not inoculated there were 48,754 cases of typhoid, with 6,991 deaths. Contrast this with our experience in the present war. Up to May last in the British Expeditionary Force in France, of about 750,000 men, 90 per cent. of whom were inoculated, there were only 807 cases, with 128 deaths, and of these but 22 in men inoculated against typhoid.

"The water at the Niagara Camp, where the troops of this division were quartered for the last six months, is perhaps the worst in Canada, carrying as it does the sewage of Buffalo and other towns up the river, where the presence of typhoid is almost constant. Yet in the 20,000 men who passed through the camp in the period mentioned, not a single cause of typhoid was traceable to infection in the camp. This was due not only to the inoculation of the men

against the disease, but also to preventive measures taken to purify the water and by daily and hourly checking of water samples by means of a bacteriological laboratory, by careful sanitary supervision, by the destruction of flies, and by the boiling of the dishes and other common utensils used by the men.

"Preventive medicine has reduced the death rate from tuberculosis in the province from 148 per 100,000 to 85 per 100,000 in the last ten years. It has served within the last three years to reduce the death rate among babies under 1 year from 117 per 1,000 births to 103. It will do more than this if the standard of medical education in the province is maintained, but if, on the other hand, unqualified charlatans, who treat every disease by massage or by re-adjustment of the spinal vertebra or by mechanical exercise or by prayer, present or absent, without the aid which God has given to mankind, are allowed to legally carry on their propaganda, I look forward to a serious setback to the prevention of disease among our people.

"Every single effort made in the prevention of disease among mankind and animals, every discovery which has aided in the length and comfort of men's lives, the triumphs of present-day surgery, the conserving of our armies from disease, the rescue of wounded soldiers from the inevitable death of their comrades of forty or fifty years ago, have been due to a sound knowledge of the principles of medical science. The well-trained physician despises nothing which may save his patient from disease and its consequences, he proves all things, holding fast to that which is good. Is there any reason, then, why we should do anything which will expose the public to the practice of unqualified men?"

It is, however, fair to remark, in connection with the above, that an examination of the schedule, already quoted, showing the hours devoted to different subjects by the Chicago College of Osteopathy as contrasted with those of the four medical colleges in Chicago, and of the appeal issued by the American Osteopathic Association, will disclose the fact that bacteriology and separate hospitals for infectious diseases are now treated as matters quite within the scope of the osteopathic idea.

An illustration of the advance in ideas of osteopaths is furnished by Dr. Hulett, a member of the Osteopathic Board of Examiners appointed by the State Medical Board of Ohio. It appears that osteopaths were examined by the State authorities in obstetrics, which they considered gave them the right to practise that branch and therefore to use antiseptics and anæsthetics. This is, of course, administering drugs, and the osteopaths applied to the Legislature in 1916 and obtained the right so to do, notwithstanding the fact that originally osteopathy repudiated drugs altogether.

To this may be added the comment made in the N. O. Medical and Surgical Journal that osteopaths have applied and in many cases succeeded in being registered under the Harrison Narcotic Law in order to be permitted to administer legally opium and other narcotics, the use of which it is the intent of the United States to restrict to the most legitimate channels.

The suggestion that osteopaths should be licensed as such, and their practice restricted, is not one that commends itself to me. In addition to the fact that they are approximating to the regular schools, and that it would be unfortunate if Ontario were to be the dumping ground for all those graduating from unregistered colleges, there is the practical difficulty of enforcing any such restriction. Its difficulties from professional, political and practical standpoints are well set out in the Bulletin, Vol. I, No. 6, of the State Medical Boards of the United States, and in it I entirely concur:

"Under the pretext that they were 'not practising medicine' so-called drugless practitioners have prevailed on the legislatures of several states to grant them the privilege of obtaining licenses under lower educational standards than are required of physicians. In the majority of these states such practitioners are not permitted legally to practise surgery or to prescribe the use of drugs. In other words, they are supposed to limit their practice to the use of the method or system of treatment advocated by the particular cult to which they belong. This arrangement, in which the public interests were forgotten, if not deliberately set aside, is unsatisfactory and indefensible from every point of view. It is class legislation, since it provides unequal educational standards for different groups of practitioners of the healing art. The limitation of practice is dangerous, since every practitioner of the healing art should be acquainted with all methods of treatment and be free to use the one which meets the immediate needs of the patient—to save his life, if it is an emergency case, the prompt administration of a drug may be essential. The arrangement is a serious handicap to those drugless practitioners who honestly comply with its provisions, and places a premium on law-breaking, deceit and pretence for those who disregard the restrictions. In short, this scheme of restricted practice provides a limitation which does not limit; it adds to the confusion already existing in the licensing of physicians; it defeats the purpose of the Medical Practice Act, and betrays the public to the hordes of those who are not qualified by training to know whether a patient is sick or well, to differentiate between diseases, to select and apply the treatment most apt to result in a cure, or to take such measures as will prevent the spread of a contagious disease to others. The only way to correct the evils of this bad arrangement, and at the same time safeguard the public welfare, is to require every practitioner of the healing art to meet certain minimum educational qualifications by which it can be known that he has obtained a satisfactory training in the fundamental medical sciences. The interests of the public should not be pushed aside in order to favour one clique of practitioners, by whatever name they may be called. The first essential of the practice of the healing art is the educational qualification."

I may add here a discussion of this subject from the Flexner report, the essence of which is the undoubted fact that the differences between the scientific medical school and that of osteopathy concerns therapeutics only, and that on all other subjects there is complete agreement.

The extract follows:

"A model State Board law must therefore guard the following points: the membership of the board must be drawn from the best elements of the profession, including—not, as now, prohibiting—those engaged in teaching; the board must be armed with the authority and machinery to institute practical examinations, to refuse recognition to unfit schools, and to insist upon such preliminary educational standards as the state's own educational system warrants; finally, it must be provided either by appropriation or by greatly increased fees with funds adequate to perform efficiently the functions for which it was created. The additional powers needed, in order to deal as efficiently with the practice of medicine, lie outside the present discussion.

"Far-reaching legislative changes would be required in most states before the State Boards could play the part here assigned to them. Yet for it they are clearly destined. As a matter of fact, recent legislation has been self-contradictory. The Boards have been strengthened, their powers more satisfactorily defined; and thereupon the end thus sought has been partially defeated by the creation of sectarian boards with lower standards and looser ideas. Minnesota, for example, obtained an

excellent law, consolidated the medical schools of the State, established a high standard, and quarantined against invasion by a low-grade product from without; and then, having fairly secured for the people of the State the best attainable conditions in the matter of protecting the public health, it proceeded partly to undo the good work by establishing a separate Osteopathic Board with power to license osteopaths—who will treat all diseases, and quite possibly in all sorts of ways—according to standards and methods fundamentally at variance with the main statute already outlined. The creation of separate boards is thus a roundabout method of recommitting the errors that the main currents of scientific thinking and effort are endeavouring to remedy. Our forty-nine states and territories have now eighty-two different boards of medical examiners. The province of the state in this matter is plain. It cannot allow one set of practitioners to exist on easier and lower terms than another. It cannot indeed be a party to scientific or sectarian controversy. But it can and must safeguard the conditions upon which such controversy may be fought to its finish. The mooted points concern only therapeutics; in respect to all else there is complete agreement. If matters in dispute are omitted from the examination, enough is left for all essential purposes. A single board should subject all candidates, of whatever school, to the same tests at every point. The license of the state is a guarantee of knowledge, education and skill. The layman is in no position to make allowances. The state's M.D. and the state's D.O. offer themselves for essentially the same purposes. The state stands equally as guarantor of both. No citizen can indeed be wholly protected by the state against his own ignorance, fanaticism, or folly. A man who does not 'believe' in doctors cannot be forced to call them in or to heed them, any more than a man who does not 'believe' in wearing rubbers can be compelled to don them in slushy weather. The state is powerless there. But having undertaken to visé practising physicians for the protection of those who summon them, it must see to it that the licenses to which it gives currency bear a fairly uniform value. Between the graduate of Harvard and the graduate of the Boston College of Physicians and Surgeons, the layman could not judge even if he knew the origin of each. As a matter of fact, he hardly knows so much. But in the act of licensing both for one purpose, the state assures its citizens of their substantial equality. It is shocking to reflect that, what with written examinations and separate boards, the divergencies run all the way from a high degree of competency to utter ignorance and unfitness."

I have, in discussing this matter, made the assumption that the osteopathic colleges and the profession itself are making a serious effort at improvement. If this is wrong there is only left the alternative asserted by Dr. Baldy and Dr. Pritchett, that it is a paper progress. If so, then the conclusion I have come to becomes inevitable.

SUPPORTING STATEMENT "C."

Chiropractic and Manotherapy.

Much that has been said as applicable to the subject of osteopathy might be repeated as to Chiropractic, notwithstanding its violent dislike to be classed with the former.

There is one school of chiropractic in Ontario, situated in Hamilton. Its equipment is given as of the value of $1,200 all chattel property, office furniture, etc. Its receipts from January, 1914, to December, 1915, have been as follows:

Cash tuitions	$6,595 00	
Clinic revenue	378 00	
Bills receivable	1,080 00	
		$8,053 00

Its expenditures have been:

Office expenses, etc.	$629 71		
Sundries	165 87		
Moving, lumber and work	365 16		
Printing and advertising	560 20		
Travelling expenses	148 00		
Books and supplies	548 60		
Rent	520 00		
Commissions	70 00		
Fixtures and furniture	418 20		
Legal services	19 00		
Coal	45 00		
		$3,489 74	
Salaries		3,251 62	
			$6,740 36
Balance represented by notes and cash			$1,312 64

The institution is carried on in rented quarters, being half the ground floor at the old public library building in Hamilton, the rental being $450 per annum, and the insurance $1,000. It has treated 250 patients, or an average of 12 patients a month, has 25 graduates, and had 14 students in attendance when inspected in December, 1915. Students pay $250 for the course. Application for incorporation was made in April, 1914, but refused by the Provincial Secretary. The course is twelve months, either continuously or two years of six months each, with no entrance examination or standard. Anatomy is treated as a literary course, and is chiefly devoted to the bony portion of man which comes into direct relation with the passage of important nerves. The staff consists of Ernst DuVal, his wife and son, and Dr. Patterson, a practising chiropractor, is an honorary member. Three and a half hours in the morning are devoted to lectures, recitations and quiz work, and one and a half hours to clinical instruction on patients who pay $1 per month.

One of the difficulties in dealing with chiropractic is its exclusive and unusual quality. In the address made before me by Dr. E. DuVal, who conducts the Canadian Chiropractic College in Hamilton, he says:

"Chiropractic is a unique science. It has nothing in common with any other method, class, school or cult, neither in its science, philosophy, art, doctrine or principle upon which it is based.

"It is essentially natural and self-sufficient in its own sphere.

"Chiropractic does not claim to treat, cure or heal anything or anybody of ailments or diseases.

"The chiropractor does not concern himself with . . . the consideration of effects: the all-important thing for him is to locate and remove the cause, regardless of the effect."

His definition of chiropractic is in effect that physical interference with the carrying capacity of the nerves is the predisposing cause of disease, and, when the interference is sufficiently severe, the disease itself: that these interferences most often take place in the spinal column; that the locating and removal of these pressures is the removal of the cause of disease, the essential work of the chiropractor: that his highly cultivated sense of touch enables him to appreciate the interferences by palpation, i.e.: the act of feeling with the fingers the relations of the vertabræ with each other: that he readjusts the bones and relieves the pressure, restoring the harmony between the brain and the tissues and organs of the body.

Dr. DuVal adds:

"Fake chiropractors have been produced in large numbers by bogus schools, which for a mere song and in a few weeks' time, even by correspondence, succeed in exploiting the public at the expense and to the detriment of the noblest science ever presented to the world. And owing to this, and in self-defence, genuine schools have been compelled to maintain a minimum course at a minimum cost to sustain themselves in the field of action and to protect the science.

"Moreover, we place some of the blame on the authorities of both the United States and Canada, who, through the instigations of the older professions, which hold a monopoly of administering to the sick, did not investigate the science of chiropractic sooner and afford it the proper protection to keep it pure and unadulterated, and defend it at least against its intrinsic enemies, the grafters."

"As to the curriculum of this college, Dr. DuVal says:

"The curriculum of the Canadian Chiropractic College consists of a reliable course in anatomy, sufficiently extensive to enable its graduates to compare favourably with the practitioners of other professions, except those engaged in the actual teaching of this science; a substantial knowledge of practical and established physiology, refraining from entering into the unknown and speculative, which forms the greatest portion of the books; a practical knowledge of symptomatology and diagnosis; rudiments of obstetrics; elementary embryology; the science of chiropractic; the philosophy of chiropractic; the art of chiropractic, which consists of analysis, palpation, adjusting and nerve-tracing, studies that are characteristic of chiropractic, differing from all else of the name; a course of two daily lectures and other incidental lectures on chiropractic philosophy and kindred subjects, philosophy being interpreted in both its literal and modern acceptation; the first being the 'love of truth and wisdom,' and the second 'a course of reasoning and argumentation' based upon facts relating to the science of chiropractic and natural law."

As to diagnosis, the following explanation is given:

"Chiropractors have no earthly use for diagnosis, as such, for the practice of chiropractic is unlike the majority of the other healing professions, to whom diagnosis is a necessity, because of their having to administer the right medicine for the right disease, and therefore it becomes imperative to have a correct diagnosis of the conditions on account of the danger involved in administering the wrong medicine, which might prove disastrous. But it is not so with the chiropractor, whose system involves only the removal of the cause of the disease, and that being always the same and requiring no dangerous drugs, diagnosis, therefore, becomes useless, except that he, as well as others, must know sufficient of symptoms and diagnosis for the purpose of differentiating between contagious and non-contagious

diseases, not to assist or guide him in his work, but to conform to the laws of the several Boards of Health, who require that contagious cases be reported, more fully investigated, and, if necessary, isolated."

He scouts bacteriology, materia medica and chemistry as follows:

"They would also compel us to study bacteriology. This also is of no value to the chiropractor, who does not consider that it is worth the while to spent time, energy and money to microscopically examine the infinitesimal mites; to group and classify them, count their appendages and try to memorize their names.

"We would also be required to learn materia medica.

"What on earth could we do with that ponderous knowledge, we who abhor the very name of drugs and repudiate their use? I admit that they consider this study of great value to them, as they have been searching a long time for an elixir of life and that they still expect to find one.

"There is also chemistry, which is a valuable science, but it has nothing in common with chiropractic, and cannot be made an adjunct to it."

As to education, preliminary to admission to his college, Dr. DuVal says:

"One important feature of the question of education for chiropractors is that of preparatory qualifications; in other words: what are the 'requirements of entrance' necessary to learn chiropractic at the Canadian Chiropractic College? To be truthful, we candidly say that we are not over exigent on 'requirements of entrance' but we are most particular in exacting requirements of graduation; we think that of far greater importance."

In his answers to me in Hamilton, Dr. DuVal said that chiropractors do not care whether an organ is diseased or not, they do not examine or treat it, but merely adjust the spinal column and that they act, in any case, upon their cardinal principle without examination.

Dr. Palmer, who conducts the principal school of chiropractic, in Davenport, Iowa, was present at one of the sessions of the Commission, and in the course of his address said that he did not teach pathology, except to enable a chiropractor to detect infection and refuse the case. As to bacteriology, he said the chiropractor did not believe in bacteria, and that bacteriology was the greatest of all gigantic farces ever invented for ignorance and incompetency, and as to analysis of blood and urine, he considered it of no value.

An interesting cross-examination of Dr. Palmer, in 1910, in the case of the State v. Jansheski is among the exhibits handed in with my report, and in it will be found many definite statements of the same character. One of these is, that chiropraxy is different from any other theory of disease that he knows of; and another that the effect, i.e., what is called disease "cuts no ice with the chiropractor"; and a third, that germs cause no disease.

Dr. Walton, M.D., Harvard, also D.C., in a pamphlet dated July 1st, 1914, says (p. 11):

"The assertion that the real and only physical cause of disease is a mechanical interference with the flow of energy from the brain to the suffering part or organ, and that this interference, in by far the majority of cases, is due to a vertebral subluxation, is so different from all theories of causation heretofore advanced that at first it may seem flagrantly erroneous and wholly untenable, but the truth of this view is readily proven."

This is quoted, almost textually, with approval in the *Progressive Chiropractor*, published in Toronto in August, 1914, by the Ontario Chiropractors' Association, at page 5.

The same idea is expressed in a communication from Leo W. Edwards, M.D., D.C., dated June, 1917, in which the following passage occurs:

"The basic chiropractic idea is that the human body is a machine run by a force called mental impulses, generated by the brain as electricity is generated by a dynamo. From the brain these mental impulses are transmitted through the spinal cord, over the nerves to the tissue cells located in every organ and part of the material body where this energy is expressed as the function for which the particular organ is intended. The flow of mental impulses from brain to tissue cell is continual; and there is also a return circulation from tissue cell to brain, completing the cycle, whereby pain, heat and other sensations are recorded in the brain. Even the medical man realizes that each organ of the body must be properly 'innervated,' but he does not recognize this circulation of mental impulses which can be proven by a study of its physiological and pathological action, because, like electricity, mental impulses are an invisible force whose exact nature is not understood. The chiropractor claims that as long as the circulation of mental impulses to every part of the body is normal in quantity and rate, health will be the result, but if the supply of mental impulses is cut off or hindered, function will be stopped or hindered in like degree. That is, each organ of the body can only function according to the amount of power it receives, and hence a man is in a state of health or disease according to whether the nerves are transmitting mental impulses or not."

This is probably taken from a booklet called "Chiropractic," by Dr. Robbins, Sault Ste. Marie, Mich., in which, on page 3, is the following:

"Every individual has an innate (born with) and an educated intelligence. The innate intelligence is that inherent force or energy which controls and cares for the body from birth till death, and is usually called nature, instinct, etc. It is this energy which controls every action and function, including the circulation, respiration, secretory, excretory, and assimilation." . . .

I have extracted these statements in order to indicate how impossible it would be to endeavour to assimilate chiropractic with our present system of medical education or practice.

A very clear illustration of the sort of instruction which may be picked up at a so-called chiropractic college is found in the evidence of one Pickles, taken at an inquest in St. Thomas, Ontario, in April, 1917, extracts from which are transmitted with this report. He was a farm hand, and took a correspondence course extending over three months, in which he wrote about twelve or thirteen letters, and received about the same number. He then went to the college in Sault Ste. Marie, carried on, in three rooms, under Dr. Robbins (from whom I have quoted above), and spent two months there—heard lectures on anatomy, physiology and dietetics, and attended clinics, that is, saw treatment of patients, saw charts showing nerves, but did no dissection. This was his whole medical education, and on its conclusion, in 1912, he got a diploma as "Doctor," put out his sign, advertised and began practising.

Dr. Palmer, in a pamphlet issued since he was heard before the Commission, says that the medical and the chiropractic courses are "as opposite as the poles."

An important statement was made by Dr. DuVal, that fake chiropractors have been produced in large numbers by bogus schools, of which I have cited an instance, and Mr. Backus, who appeared as counsel for the chiropractors, re-echoed this. If this be so, I am unable to reconcile it with the statement made to me by Dr. Palmer, that "there are about 165 chiropractors in Ontario, to the best of my knowledge. Of these 165 there is not, to the best of my knowledge, more than 15 that I would not recommend as being competent chiropractors, and I know them all personally."

To test the basis of this commendation, it is desirable to consider the courses in Dr. Palmer's school of chiropractic, which are, according to the Tenth Annual Announcement, 1916-1917, as follows:

"COURSES OF INSTRUCTION."

"The Palmer School conducts the courses described in this section, viz.: laymen, scientific, professional, post-graduate and spinographic. All studies in any course are consecutively arranged, there being no break in time for purpose of vacation, etc. The school is open for class work the year round.

"THE LAYMEN COURSE."

"Consists of twelve full calendar months, or two collegiate years, of six full calendar months each. There is a total of 1,389½ class hours in this course. These are taken consecutively, six days in every succeeding week without a break, until the full twelve calendar months are completed."

"SYNOPSIS OF LAYMEN COURSE."

"Price of tuition for one person, payable on matriculation, $250.00; for man and wife, $255.00.

"One may matriculate for the Laymen course on any day in any week.

"Educational requirements, common school.

"Degree conferred on graduation, D.C. (Doctor of Chiropractic)."

"SCIENTIFIC COURSE."

"Eighteen consecutive calendar months, comprising three years of six months each, or a total of 2,084 class hours. Tuition price for one person, payable in cash or its equivalent at time of matriculation, $300.00; for man and wife, $305.00. This course is arranged for and recommended to students desiring the most complete education, one that will all the better prepare them for State Board examinations when the point of location for future practice is in some section of the country where the law requires such examination. Nine states now have such requirement, and others will be added from time to time until the whole United States shall be included. Among subjects taught in the course not included in the Laymen course are elementary chemistry, bacteriology, minor surgery, obstetrics, microscopy, and a more extended study of spinography, X-ray work."

It will be noted that in this scientific course bacteriology is said to be included. The statement as to the qualifications of chiropractors in Ontario must be considered in the light of this latest announcement and the dates of their graduation, if from the Palmer School of Chiropractic. The details as to those represented before me are stated in my report.

Taking the present organizations of chiropractors in Ontario, I find that there are three. The Canadian Chiropractors' Association has twenty-four members, with an income for 1916 of $316.57, which includes cash in hand, $254.12 on December 1st, 1915, and an expenditure of $155.56. One hundred and ninety-three dollars represents the amount paid in 1915 for members' fees, none appearing on the 1916 statement. One hundred and one dollars was paid in 1916 for advertisement in telephone book.

The Dominion Chiropractic Association, founded July 2nd, 1915, has eighteen members, and an annual income of $201.00, of which $110.00 was expended in

paying Dr. Palmer's expenses in appearing before the Commission, as well as the stenographer's fees.

The Ontario Chiropractors' Association has twenty-five members, and an income for the year 1915-16 of $202.97.

Judged by numbers and financial resources, it is difficult to understand where the money to build and equip a college is to come from. But the condition at present is that $1,000 would represent the entire income of the organized chiropractors in this Province. As the membership of these three associations is only sixty, I doubt if what is called "recognition" would lead to an establishment in Ontario of any size, with adequate resources. Apparently the situation, as it appealed to Dr. Palmer, is that legislation here would affect his school. He says that he has fifty or seventy-five enrolments from Canada alone, and that legislation here would cut off that enrolment, because those students would want to come back here to practise, and if that were impossible they would not even come there to enquire.

It is to be noted that the State of Iowa, where there are three chiropractic colleges, does not admit them to practice, and there are only five states that do so admit.

How is it possible to recognize the science of chiropractic in this Province, which would then be flooded by these "fake chiropractors," unless one is determined to adhere to the solitary school now operating within this Province, or to prevent all who do not come from the two schools in Iowa and one in Oklahoma, U.S.A., which Dr. DuVal recommends.

The attraction offered by these schools was, and perhaps still is, largely commercial. In the Palmer School of Chiropractic Announcement for 1912 the student is advised to take a twelve or eighteen months' course in these words:

"Graduates of this course are able to hold the best positions with the greatest financial returns and in the best cities."

And again: "Chiropractic will fill your pockets if you will learn this profession right, give people health and the—well, you know what you would do if you had the cash. Think it over, and act."

This sort of appeal is absent from Dr. Palmer's latest announcement, 1916-17.

Dr. DuVal presented his case ably and well, and the chiropractic literature submitted or collected by me bears out his utterances. But unless I am absolutely to ignore the value of scientific investigation as the handmaid of modern medicine, I cannot reconcile it with the theory upon which chiropractic depends, which resolutely rejects its aid.

It is to be noted, too, that the teaching and equipment of the chiropractic schools in Iowa necessarily correspond to their rejection of scientific laboratory investigation.

I append a tabulation of the reports on them made by the Inspector of the Pennsylvania Bureau of Medical Education and Licensure, published in December, 1915, by the *Journal of the American Medical Association* in Chicago:

"Regarding the individual colleges, the inspector made the following statements:

"Davenport College of Chiropractic.—Their alleged 'chemical laboratory' consisted of a table about eighteen inches square, on which were six dusty bottles and three dirty test tubes. There were no records of work done by the students or of attendance at lectures or clinics.

"Universal Chiropractic College.—They are not in any way equipped to give the character of instruction that would make their graduates safe advisers to the sick.

"Palmer School of Chiropractic.—They pretend to give a course in obstetrics with no practical experience. A person who assumed to practise on information gained from this course alone would be dangerously incompetent.

"Some of their professors are exceedingly ignorant. The 'professor' of chemistry alleged he taught the 'Widal test' chemically, but chemicals for even ordinary tests were not in evidence; those in evidence showed no marks of use, most of the bottles being still sealed.

"The institution is not physically equipped to turn out safe graduates.

"A letter from Dr. J. M. Baldy, President of the Pennsylvania Bureau of Medical Education and Licensure, to whom the manuscript of this article was submitted, states as follows:

"The data quoted from our inspection is correct. I have gone over it myself and have submitted it to the Inspector."

"Chiropractic Colleges of Iowa."

A tabulation from reports of the Inspector of the Pennsylvania Bureau of Medical Education and Licensure:

——	Davenport College.	Universal College.	Palmer School.
Buildings	One, an old church.	One, fair size	Four (crowded).
Access to hospitals	None.	None	None.
Dispensary facilities	Saw no evidence of.	*Ample	
Admission requirements	None.	Common school	Common school.
Anatomy, dissecting	Not taught.	Dissect a few dogs.	Only dogs dissected.
Histology	No equipment.	Didactic only	Very incomplete.
Embryology	Not taught.	Not taught	Not taught.
Surgical Anatomy	Not taught.	Not taught	Not taught.
Physiology	Didactic only.	Lectures only	Lectures only.
Physiologic Chemistry.	Not taught.	Lectures only	No equipment.
Chemistry, inorganic and organic.	Not taught.	No practical work done by student	No equipment for teaching.
Pathology	*	*	*
Bacteriology	Not taught.	Not taught.	No equipment.
Pharmacology	Not taught.	Not taught.	Not taught.
Microscopic diagnosis.	Not taught.	Not taught.	Not taught.
Medicine	Not taught.	Not taught.	Not taught.
Pediatrics	Not taught.	*	*
Nervous and Mental Diseases.	*	*	*
Surgery	Not taught.	Not taught	Not taught.
Anæsthesia	Not taught.	Not taught	Not taught.
Gynæcology	Not taught.	Not taught	*
Eye, Ear, Nose and Throat Diseases	Not taught.	*	*
Class Rooms	One.	Two	Four.
Clinical Amphitheatre.	One large room.		Two.
Medical Library	None.	Small	None.
Microscopes	None.	Two	Twelve.
Having Oil Immersion.		One	One.
Reflectoscopes	None.	Yes	Yes.
Stereopticons	None.	Yes	Yes.
Obstetric Manikin	Part of one.	Yes	Yes.
Maternity Work	Not taught.	Not taught	Lectures only.
Charts	A few.	Large supply	Large supply.
Models	None seen.	Yes	Yes.

*This subject is taught only from the chiropractic standpoint, as it is related to certain spinal "lesions."

What is asked by chiropractors is that they should visit patients in hospitals and sanitaria, examine for insurance and issue death certificates.

This seems to me to be open to all the objections and difficulties I have stated as to osteopaths, and to others even more formidable having regard to the exceedingly narrow theory upon which chiropractic is based. The plea that the want of "recognition" has hitherto prevented the expenditure of money in the establishment and equipment of a college or colleges does not seem to be in accord with facts as they are found in the United States.

Iowa, which does not recognize this cult, has three chiropractic schools. There are over 100 chiropractic colleges, according to Dr. Barklie, in the United States, and yet only five states have allowed the chiropractor to practise without penalty. The same difficulty appears here as in the case of the osteopaths. Education can be got in the United States without any expenditure of money other than what it costs a student. This will continue just as long as there are no requirements necessitating a proper standard of local college equipment, and no legalizing of mere practice will result in establishing here any halls of learning adequate to the science as it is viewed by its adherents, as long as those facilities exist next door on a lower plane.

The amount of real equipment possessed by Dr. DuVal is insignificant, if the items are examined, and his staff is his family circle and yet he is without a competitor in Ontario.

Dr. Palmer, in the pamphlet to which I have alluded, makes a far-reaching remark. He says (p. 53):

"Dr. Edwards told you that the secret of their legislative success lay in their publicity campaign; they educated the public mind to the acceptance of the chiropractic idea. The rest of us who are in contact with the situation realize that chiropractic education must come before chiropractic legislation."

He is definitely opposed to the Ohio legislation for recognizing and classifying the various cults which had the assent of the Ohio Chiropractic Association, and strongly supports the right of the chiropractors to practise provided they are "reputable," i.e., of a proper standard. And this fact, he says, must be determined in case of a prosecution by a jury upon the testimony of other chiropractors.

MANOTHERAPY.

There is one so-called college of Manotherapy in Ontario, situated in Hamilton. It was incorporated on 3rd January, 1914, and professes to teach osteopathy, chiropractic, electro-hydropathic treatments and massage. All its staff are graduates of the American College of Mechano-Therapy.

There is to be found among the appendices a pamphlet reproducing an article published by the *Journal of the American Medical Association* of August 28th, 1909, which severely criticizes this last-mentioned institution. It quotes the following description of the therapy:

"His instruments are not knives and saws, but his own deft hands, and the vital processes of the body itself, the circulation, respiration, secretion, etc., which he manipulates as he sees fit and his judgment dictates."

The course may be completed in six months, and may be taken by correspondence.

Fortunately, the Canadian college has granted no diplomas, except five post-

graduate ones for "executive purposes," i.e., to induce students to join this college, such being granted without any course, except possibly three months, and minus any examination.

It is quite evident, from the testimony given before me (see pp. 565 and 825), supplemented by my inspection of the three rooms in a dwelling house in which its operations are conducted, that this institution should never have been incorporated with power to grant diplomas.

There is no proper course of instruction, neither adequate staff nor equipment.

SUPPORTING STATEMENT "D."

General.

In dealing with the subject of Medical Education in its practical relation to present conditions and to the alterations which it is contended will liberalize them so as to extend to the public greater benefits, I am naturally compelled to seek first for some authoritative statement of the principles underlying the situation as it now exists.

Such an examination leads to the intensely practical question as to whether those principles are to be accepted as vital, and so to control my conclusions, or whether they have resulted in too rigid an exclusion of much that is helpful in the fight against disease, both in its personal and national aspects.

And there is the additional, and scarcely less important, subject—whether it is possible, under the system which has obtained in Ontario, to secure by any means such a modification of our methods as will secure better results.

I make no apology, therefore, for examining the subject in the light thrown upon it by the research, study and industry of those who have, either by actual investigations or by their experience, contributed to the better understanding of medical education and its relation to the many problems which it presents when considered in connection with individual and public health and the effect of both on the well-being of the state.

There are some conditions which must be kept well to the front.

These are:

(1) For over fifty years medical education in this Province has been in the hands of those originally known as Allopaths, and although this term is now obsolete, it may be said that the course of medical education has, in general, followed the gradual expansion of that school into what is now known as that of modern scientific medicine.

(2) That medical education in Ontario, originally carried on by independent medical schools, has been for many years, and now is, firmly established under the jurisdiction of the universities through the medium of medical faculties therein.

(3) That the whole medical legislation has followed and authorized this system.

(4) That the universities in question have all received, and are now receiving, state aid from public moneys, and in one case at least the Province is very largely, if not principally, interested in its welfare and committed to its continuance under its present form, including its method of medical instruction and its medical equipment.

(5) That under the statute law of the Province those who seek legislative recognition for systems not in accordance with established methods have no present

status allowing them to practise, except on the theory that they are not practising medicine. Hence they are not entitled to be viewed as persons having vested rights in considering the regulation of that practice. In this the situation differs radically from that confronting the various states of the American Union, where constitutional provisions prevent state legislation from interfering with those already earning a livelihood by the practice of systems related to medicine which that legislation would otherwise forbid or regulate.

The result of the foregoing is that any radical change in the system of medical education and registration must inevitably modify profoundly the method heretofore deliberately adopted and adhered to for over fifty years in this Province, and must affect very materially the attitude and relations of the Provincial authority to the universities and its investment therein, as well as its annual grant for their support. In other words, to recognize other methods of training and to provide a place for them in the provincial system will form a departure from the traditional policy which, under present conditions, adopts a well-known system of medical training and license in order to protect the public, and will either force the Province to support, in some measure, other and different systems and allow them to grow up in opposition to the schools which depend so largely upon the support of public funds.

These considerations are not in themselves sufficient to outweigh the benefit to the public of the frank and clear recognition of the developments of other systems in the march of medical progress, provided they are in themselves beneficial or helpful in the prevention, alleviation and cure of human ills, but they make it incumbent on anyone recommending any change to be fully persuaded that real and tangible benefits will accrue from the change and that those advocating it are able and willing to demonstrate those benefits and to provide such a system of education as will submit to regulation and supervision in the same way as present methods are compelled to do.

I do not think that the situation can be properly considered unless some definite ideas are entertained as to what is the true function of the state in relation to the practice of medicine, and what medical education is intended to produce.

It ought to be clear that individuals making up the public are not themselves competent to form a proper conception of the value or the reverse of the services of those holding themselves out as physicians. There are few positions in life in which a man is so completely and often so suddenly placed in the hands of someone else as is the sick man in the presence of the physician. He cannot bargain on equal terms, and his family are equally helpless, both because of their ignorance of medical science and because, under usual circumstances, they are anxious and worried. Hence it has always been one of the highest duties of the state to see that those who are called in to prescribe for human ailments are so trained that they can be safely trusted to properly ascertain the cause and prescribe for its remedy. And not only so, but the prevention of disease in the community is such a pressing and vital need that the state is not content with providing proper training for the physician, but it compels the citizens of the state to submit not only to rules and regulations, but also to drastic measures, cures and operations for the benefit of the community prescribed by those who have adequate training and experience in such matters. And this presupposes that the state has satisfied itself that proper standards of learning have been set up and maintained for those who are thus authorized to heal and to direct.

It may, I think, be taken for granted that the duty of the state in this regard

is thoroughly recognized and welcomed, and that those who want a change in the present situation do not desire to ignore its necessity and importance.

The question, then, resolves itself into this: Can a change, which permits the training and licensing of physicians on a plan or theory different from that adhered to at present, be made with safety to the individual and without relaxing the care of the state in the performance of its admitted duty?

It is perhaps necessary thoroughly to understand what is meant by the terms used in dealing with this subject. Is medicine based on *a priori* theories, or is it the application to each case of the result of reason, research and practical experiments in other cases? Does it propound a theory and then act on it in all cases, or does it build up its maxims upon proved facts? What is the purpose of medical education? What does it produce and turn out? Upon the answers to these questions much depends. And there is the further question: Can our present system of clinical education be adapted to new methods which have not a common base or root with that now forming the foundation of present medical practice?

Without going into the history of the evolution of medicine, medical and surgical practice, and medical research, it is quite evident that at the present day they rest upon the laboratory and clinical study.

Among the many authorities I have read and listened to upon this important subject, I make no apology in quoting first from the addresses and writings of Sir William Osler, whose ability has been recognized not only in this country but in the United States and Great Britain:

"Based on science, medicine has followed and partaken of its fortunes, so that in the great awakening which has made the nineteenth memorable among centuries, the profession received a quickening impulse more powerful than at any period in its history. With the sole exception of the mechanical sciences, no other department of human knowledge has undergone so profound a change—a change so profound that we who have grown up in it have but slight appreciation of its momentous character. And not only in what has been actually accomplished in unravelling the causes of disease, in perfecting methods of prevention, and in wholesale relief of suffering, but also in the unloading of old formulæ, and in the substitution of the scientific spirit of free inquiry for cast-iron dogmas, we see a promise of still greater achievement and of a more glorious future." (Chauvinism in Medicine. Address to the Canadian Medical Association, 1902.)

"The most distinguishing feature of the scientific medicine of the century has been the phenomenal results which have followed experimental investigations.

"While this method of research is not new, since it was introduced by Galen, perfected by Harvey, and carried on by Hunter, it was not until well into the middle of the century that, by the growth of research laboratories, the method exercised a deep influence on progress. The lines of experimental research have sought to determine the functions of the organs in health, the conditions under which perversion of these functions occurs in disease, and the possibility of exercising protective and curative influences on the processes of disease.

"The researches of the physiological laboratories have enlarged in every direction our knowledge of the great functions of life—digestion, assimilation, circulation, respiration and excretion. Perhaps in no department have the results been more surprising than in the growth of our knowledge of the functions of the brain and nerves. Not only has experimental science given us clear and accurate data upon the localization of certain functions of the brain and of the paths of sensatory and of motor impulses, but it has opened an entirely new field in the diagnosis and treatment of the diseases of these organs, in certain directions of a most practical

nature, enabling us to resort to measures of relief undreamed of even thirty years ago." (Medicine in the Nineteenth Century: Address to Johns Hopkins Historical Club, January, 1901.)

"The reorganization of the medical school has been accomplished in the first two years by an extraordinary increase in the laboratory work, which has necessitated an increase in the teaching force, and indeed an entirely new conception of how such subjects as physiology, pharmacology and pathology should be taught. . . . Control of ample clinical facilities is as essential to-day as large, well-endowed laboratories, and the absence of this causes the clinical to lag behind the scientific education. . . . Within the next quarter of a century the larger universities of this country will have their own hospitals in which the problems of nature known as disease will be studied as thoroughly as are those of geology or Sanscrit. . . .

"For the third and fourth year students, the hospital is the college; for the juniors, the out-patient department and the clinics; for the seniors, the wards. They should be in the hospital as part of its equipment, as an essential part, without which the work cannot be of the best. They should be in it as the place in which alone they can learn the elements of their art and the lessons which will be of service to them when in practice for themselves. The hospital with students in its dispensaries and wards doubles its usefulness in a community. The stimulus of their presence neutralizes that clinical apathy certain, sooner or later, to beset the man who makes lonely 'rounds' with his house-physician. Better work is done for the profession and for the public; the practical education of young men, who carry with them to all parts of the country good methods, extends enormously the work of an institution, and the profession is recruited by men who have been taught to think and to observe for themselves, and who become independent practitioners of the new school of scientific medicine—men whose faith in the possibilities of their art has been strengthened, not weakened, by a knowledge of its limitations." (The Hospital as a College: Address to the Academy of Medicine, New York, 1903.)

"The problems of disease are more complicated and difficult than any others with which the trained mind has to grapple; the conditions in any given case may be unlike those in any other; each case, indeed, may have its own problem. Law, constantly looking back, has its forms and procedures, its precedents and practices. Once grasped, the certainties of divinity make its study a delight and a pastime; but who can tell of the uncertainties of medicine as an art? The science on which it is based is accurate and definite enough; the physics of a man's circulation are the physics of the waterworks of the town in which he lives, but once out of gear, you cannot apply the same rules for the repair of the one as of the other." (On the Educational Value of the Medical Society: Address at the Centennial Celebration of the Newhaven Medical Association, January 6th, 1903.)

Perhaps the best description of the extent to which the laboratory has entered into medical education is given by Dr. Lewellys F. Barker, Professor of Medicine in the Johns Hopkins University, Baltimore, Md., and a Canadian graduate of McGill University, in these words:

"A large part of the education which medical students receive nowadays is given to them in laboratories. Instead of the didactic lecture of former periods the student in a medical school of our time does practical work in nearly all the subjects of the medical course. In the anatomical laboratory he dissects the human body and examines its constituent organs, tissues and cells under the microscope, making many of the preparations for himself. In the physiological laboratory he studies the functions of the animal body less from books and from lectures

than from actual observation, as he repeats the experiments of the great masters who have made fundamental physiological discoveries. In the pathological laboratory he assists in the making of post-mortem examinations, studies the changes in form, consistence and colour or organs in disease, and under the microscope investigates the finer changes in the cells and intercellular substances in pathalogical states. In the better laboratories of this sort, too, he has the opportunity of witnessing the phenomena of life as manifested under abnormal conditions, and though pathological physiology as such has not yet reached the place in our medical schools which it seems destined to occupy, it is rapidly being developed and promises to become in the near future one of the most important features of undergraduate medical instruction. In the bacteriological laboratory the student not only hears of bacteria and of their relation to fermentation and to disease, but he handles these bacteria himself, studies them, alive and dead, under an oil immersion lens, grows them artificially upon media prepared by himself, produces certain of the infectious diseases experimentally by inoculation of animals, and recovers from the bodies of the diseased the same micro-organisms which he has inoculated. He is given, too, a practical acquaintance with the simpler methods of studying the phenomena of immunity, and gains in this way a unique conception of the nature of infection and the tendency of self-limitation of the infectious diseases; he becomes familiar with the fundamental principles of contagion on the one hand and of prevention on the other. These studies, together with those which he makes in the laboratory of hygiene, prepare him, in a way unequalled by any other form of preparation, for meeting those problems of personal hygiene and public safety which confront the medical man in private practice and in the protection of the public health. In the laboratory of physiological chemistry the medical student perfects his methods of chemical manipulation and examines for himself the various chemical constituents of the human body and its secretions and excretions.

"One needs no special prophetic instinct to recognize how important a training of this kind is for the prospective physician who will wish to keep abreast of medical advance during the next two decades, for there seems to be but little doubt in the minds of those best informed that the laboratories of physiology and physiological chemistry are to stand in much the same important relation to medicine during the next twenty years as that occupied by the laboratories of pathology and bacteriology since 1880. Furthermore, practical pharmacological studies are now essential for the medical student. The undergraduate who in the pharmacological laboratory studies the physiological effects of drugs by actual observation of the effects produced after administration to animals, making accurate measurements by the precise methods of physics and chemistry, will acquire an insight into the possibilities and limitations of treatment by drugs which will protect him from a pessimistic nihilism on the one hand, and, even more important, from uncritical enthusiasm on the other. The student thus trained will be less likely to fall a prey to the proprietary medicine manufacturer and the nostrum monger than the physician who has obtained all his knowledge concerning the action of drugs from books, lectures or the circulars of manufacturers.

"In the clinical laboratories associated with the wards of the hospital the student will be taught how to apply the knowledge gained in all the laboratories just mentioned to the problems of diagnosis and treatment as he actually meets them in his study of patients in the hospital wards and dispensaries. These hospital clinical laboratories have only just begun their development, and there are but few medical schools which have made adequate provision for them. I

have in another place called attention to the great importance of these laboratories for the training of medical students, as well as for the advance of practical medicine, and have tried to show that it is just as necessary for physicians and surgeons to have their own special laboratories attached to their wards, in which chemical, physical, bacteriological and psychic investigations can be made as it is for aniline dye manufacturers to have chemical laboratories attached to their plants for solving their special problems, or for brewers to have bacteriological laboratories and skilled bacteriologists constantly at work to maintain and improve the standard of their products. It will not do for the sciences of diagnosis and therapy to rely upon the laboratories of chemistry, physiology and pathology in the medical school to solve their particular problems for them. The more fundamental sciences have their own problems of a more abstract nature, which it is their duty to investigate, and the time has certainly come for diagnosis and therapy to develop the laboratory sides of these sciences for themselves.

"By far the greatest advantage of instruction of the medical student by the laboratory method is, however, his training in the scientific habit of thought. What helps him is less the facts which he learns, or the memory of the experiments he makes, than the establishment in him of the conception that in order really to understand it is necessary to come into direct personal contact with the object to be understood. If some of his teachers are, and certainly some of them should be, productive investigators, he is likely to be impressed with the necessity of accuracy in work, of patience in it, if things are to be accomplished, of steady industry and persevering effort.

"He learns also to have a love for detail and a desire for complete and exhaustive knowledge; he comes to appreciate skill in invention and in the application of new and precise methods, and there grows in him a desire for full appreciation of the value of all existing methods or principles which will prevent him from falling a prey to sectionalism in medicine or to any single idea or principle which is limited in its nature. In other words, he develops in those three directions of thought which characterize three more or less distinct and important attitudes of the human mind; namely, the exact habit or attitude of thought, the historical and the critical." (From an address delivered at the formal opening of the Medical Laboratories Building, Queen's University, Kingston, Ont., January 4th, 1908.)

Again, in a paper published in 1916, he says:

"The reinstatement of the medical faculties of our universities in the respect of the world of scholars has undoubtedly been due to the astonishing growth of the scientific spirit among medical men, and to the remarkable expansion of our knowledge of man and of the diseases that endanger his life and his health through the rise of the methods of research in the natural sciences. These methods have been and are now being applied with great zeal to the study of the structure and function of living organisms. No small part of the progress has been due to the devising of new methods of investigation that have been perfected in laboratories. Intensive work has required an ever increasing division of labour in research, with specialization of the fields of investigation and constant additions of departments and professorships in our universities and medical schools. The new knowledge that has been acquired, and the new forms of technical procedure that have been elaborated, have revolutionized our ideas of the nature and causes of disease, have enormously extended our methods and conceptions of diagnosis, and have led to a truly astonishing advance in rational therapeutics. It is no wonder that the medical course has been lengthened, for the amount of clinical

as well as of preclinical training that is considered desirable before graduation has steadily grown.

"We rejoice in the fact that there is no longer dissent from the view that, precedent to undertaking the more complex medical sciences of diagnosis and therapy, a considerable training in the preliminary natural sciences (physics, chemistry and biology), and education in the simpler medical sciences (anatomy, physiology, pharmacology and general pathology) are imperative. I speak of the 'more complex medical sciences of diagnosis and therapy,' for the time has passed when the work of the clinics could be regarded as something that is not scientific —as something merely practical or technical, to be sharply distinguished from the 'theoretical' or 'scientific' work of the preclinical sciences."

In the address at Kingston already quoted, Dr. Barker sums up the results in a striking way. He says:

"The advances which have been made in our own time by investigative medicine are truly phenomenal, and no layman, unless he has made a special point of looking into the matter, has any conception of the increased power medical men now possess to lessen physical suffering from disease and accident, or the means at their command for controlling the spread of infectious and contagious disease. Not only has the prospect of life for each human individual been markedly lengthened, but immeasurable advantages have accrued to the race as a whole, no small part of our industrial development at home and the opening up of countries abroad hitherto inaccessible to civilized whites having been due to the protective discoveries of modern medical science."

President Falconer, before the Commission, has expressed the view of our largest university in these words:

"The education of the medical student to-day is thoroughly scientific. The empirical stage of medicine has passed away, and the results of the new methods are seen in the decreased death rate and in increased average longevity. Modern scientific medicine is built on fundamental science. There is no one who has contributed more to the advance of modern medicine than Pasteur, and Pasteur was a chemist. The purpose of medical education is to create in the student an attitude of mind based on thorough scientific method, so that as a practitioner he will not depend on routine methods or traditional treatment, but will advance with his rapidly advancing profession. The success of the practitioner, therefore, depends upon (*a*) accurate diagnosis, and (*b*) scientific treatment.

"For this diagnosis he must have accurate information of pathology, the diseased condition of the body, of physiology, its normal condition, and anatomy. These sciences depend in their turn upon physics, chemistry and biology.

"Again, for treatment he must thoroughly understand anatomy, physiology, pathology, bacteriology and pharmacology, and for most of these sciences chemistry is not only an essential, but it is becoming more and more important. On these sciences the clinical structure is built in which to-day the scientific laboratory plays a great part. All the hospitals of the best grade have scientific laboratories connected with them for diagnosis and treatment of clinical work. In clinical medicine where the student is trained in scientific diagnosis and treatment, he learns also the principles of preventive medicine, and is taught to recognize infectious diseases. Without such a competent knowledge, a practitioner of medicine might bring upon a community an epidemic."

I give the above as an indication of what view is now taken by the medical and teaching professions of the status of medicine at the present time. I do not propose to quote, in the body of the report, other statements, but there will

be found in the evidence before the Commission many statements in line with the above from many eminent quarters.

In order to indicate the complete change in the viewpoint of educationalists regarding the science of medicine and its study and pursuit, I append here the analysis of past and present conditions from the report of Abraham Flexner to the Carnegie Foundation, issued in 1910.

"Prior to the placing of medicine on a scientific basis, sectarianism was, of course, inevitable. Everyone started with some sort of preconceived notion; and from a logical point of view, one preconception is as good as another. Allopathy was just as sectarian as homeopathy. Indeed, homeopathy was the inevitable retort to allopathy. If one man 'believes' in dissimilars, contrary suggestion is certain to provide another who will stake his life on similars; the champion of big doses will be confronted by the champion of little ones. But now that allopathy has surrendered to modern medicine, is not homeopathy borne on the same current into the same harbour?

"The modern point of view may be re-stated as follows: Medicine is a discipline, in which the effort is made to use knowledge procured in various ways in order to effect certain practical ends. With abstract general propositions it has nothing to do. It harbours no preconceptions as to diseases or their cure. Instead of starting with a finished and supposedly adequate dogma or principle, it has progressively become less cocksure and more modest. It distrusts general propositions, *a priori* explanations, grandiose and comforting generalizations. It needs theories only as convenient summaries in which a number of ascertained facts may be used tentatively to define a course of action. It makes no effort to use its discoveries to substantiate a principle formulated before the facts were even suspected. For it has learned from the previous history of human thought that men possessed of vague, preconceived ideas are strongly disposed to force facts to fit, defend or explain them; and this tendency both interferes with the free search for truth and limits the good which can be extracted from such truth as is in its despite attained.

"Modern medicine has therefore as little sympathy for allopathy as for homeopathy. It simply denies outright the relevancy or value of either doctrine. It wants not dogma but facts. It countenances no presupposition that is not common to it with all the natural sciences, with all logical thinking. . . .

"It is precisely the function of scientific method—in social life, politics, engineering, medicine—to get rid of such hindrances to clear thought and effective action. For it, comprehensive summaries are situate in the future, not in the past; we shall attain them, if at all, at the end of great travail; they are not lightly to be assumed prior to the beginning. Science believes slowly; in the absence of crucial demonstration its mien is humble, its hold is light. 'One should not teach dogmas; on the contrary, every utterance must be put to the proof. One should not train disciples but form observers; one must teach and work in the spirit of natural science.'

"Scientific medicine, therefore, brushes aside all historic dogma. It gets down to details immediately. No man is asked in whose name he comes—whether that of Hahnemann, Rush, or of some more recent prophet. But all are required to undergo rigorous cross-examination. Whatsoever makes good is accepted, becomes in so far part, an organic part, of the permanent structure. To plead in advance a principle couched in pseudo-scientific language, or of extra-scientific character, is to violate scientific quality. There is no need, just as there is no logical justification, for the invocation of names or creeds, for the

segregation from the larger body of established truth of any particular set of truths or supposed truths as especially precious. Such segregation may easily invest error with the sanctity of truth; it will certainly result in conferring disproportionate importance on the fact or procedure marked out as of pivotal significance. The tendency to build a system of a few partially apprehended facts, deductive inference filling in the rest, has not indeed been limited to medicine, but it has nowhere else had more calamitous consequences. . . .

"The ebbing vitality of homeopathic schools is a striking demonstration of the incompatibility of science and dogma. One may begin with science and work through the entire medical curriculum consistently; exposing everything to the same sort of test; or one may begin with a dogmatic assertion and resolutely refuse to entertain anything at variance with it. But one cannot do both. One cannot simultaneously assert science and dogma; one cannot travel half the road under the former banner, in the hope of taking up the latter, too, at the middle of the march. Science, once embraced, will conquer the whole. Homeopathy has two options; one to withdraw into the isolation in which alone any peculiar tenet can maintain itself; the other to put that tenet into the melting-pot. Historically it undoubtedly played an important part in discrediting empirical allopathy. But laboratories of physiology and pharmacology are now doing that work far more effectively than homeopathy; and they are at the same time performing a constructive task for which homeopathy, as such, is unfitted. It will be clear, then, why, when outlining a system of schools for the training of physicians on scientific lines, no specific provision is made for homeopathy. For everything of proved value in homeopathy belongs of right to scientific medicine and is at this moment incorporate in it; nothing else has any footing at all, whether it be of allopathic or homeopathic lineage. 'A new school of practitioners has arisen,' says Dr. Osler, 'which cares nothing for homeopathy and less for so-called allopathy. It seeks to study, rationally and scientifically, the action of drugs, old and new.' . . .

"In dealing with the medical sectary, society can employ no special device. Certain profound characteristics in one way or another support the medical dissenter; now the primitive belief in magics crops up in his credulous respect for an impotent drug; again, all other procedure having failed, what is there to lose by flinging one's self on the mercy of chance? Instincts so profound cannot be abolished by statute. But the limits within which they can play may be so regulated as to forbid alike their commercial and their crudely ignorant exploitation. The law may require that all practitioners of the healing art comply with a rigidly enforced preliminary educational standard; that every school possess the requisite facilities; that every licensed physician demonstrate a practical knowledge of the body and its affections. To these terms no reasonable person can object; the good sense of society can enforce them on reasonable and unreasonable alike. From medical sects that can live on these conditions, the public will suffer little more harm than it is destined to suffer anyhow from the necessary incompleteness of human knowledge and the necessary defects of human skill."

In considering now what education in medicine is to be acquired, having in view what it is intended to accomplish, I have not found any better descriptions than those given by Sir William Osler in his various addresses:

"Medicine is a most difficult art to acquire. All the college can do is to teach the student principles, based on facts in science, and give him good methods of work. These simply start him in the right direction; they do not make him a good practitioner—that is his own affair."

(Chauvinism in Medicine.)

"The hardest conviction to get into the mind of a beginner is that the education upon which he is engaged is not a college course, not a medical course, but a life course, for which the work of a few years under teachers is but a preparation."

(Farewell address to American and Canadian medical students.)

"To cover the vast field of medicine in four years is an impossible task. We can only instil principles, put the student in the right path, give him methods, teach him how to study, and early to discern between essentials and non-essentials."

(After Twenty-five years: Address at McGill College, Montreal, 1899.)

"On the other hand, with good habits of observation you may have got deep enough into the subject to feel that there is still much to be learned, and if you have had ground into you the lesson that the collegiate period is only the beginning of the student life, there is a hope that you may enter upon the useful career of the student-practitioner. Five years, at least, of trial await the man after parting from his teachers and entering upon an independent course—years upon which his future depends, and from which his horoscope may be cast with certainty."

(The Student Life.)

"The last quarter of the last century saw many remarkable changes and reformations, among which in far-reaching general importance not one is to be compared with the reform, or rather revolution, in the teaching of the science and art of medicine. Whether the conscience of the professors at last awoke, and felt the pricking of remorse, or whether the change, as is more likely, was only part of that larger movement towards larger events in the midst of which we are to-day, need not be here discussed. The improvement has been in three directions: in demanding of the student a better general education; in lengthening the period of professional study; and in subsituting laboratories for lecture-rooms—that is to say, in the replacement of theoretical by practical teaching. The problem before us as teachers may be very briefly stated: to give to our students an education of such a character that they can become sensible practitioners—the destiny of seven-eighths of them. Toward this end are all our endowments, our multiplying laboratories, our complicated curricula, our palatial buildings. In the four years' course a division is very properly made between the preparation or scientific branches and the practical; the former are taught in the school or college, the latter in the hospital. Not that there is any essential difference; there may be as much science taught in a course of surgery as in a course of embryology. The special growth of the medical school in the past twenty-five years has been in the direction of the practical teaching of science. Everywhere the lectures have been supplemented or replaced by prolonged practical courses, and instead of a single laboratory devoted to anatomy, there are now laboratories of physiology, of physiological chemistry, of pathology, of pharmacology, and of hygiene.

"Apart from the more attractive mode of presentation and the more useful character of the knowledge obtained in this way, the student learns to use the instruments of precision, gets a mental training of incalculable value, and perhaps catches some measure of the scientific spirit. The main point is that he has no longer merely theoretical knowledge acquired in a lecture-room, but a first-class acquaintance with the things themselves.

"The work of an institution in which there is no teaching is rarely first-class. There is not that keen interest, nor the thorough study of the cases, nor amid the exigencies of the busy life is the hospital physician able to escape clinical

slovenliness unless he teaches and in turn is taught by assistants and students. It is, I think, safe to say that in a hospital with students in the wards the patients are more carefully looked after, their diseases are more fully studied and fewer mistakes made.

"The larger question, of the extended usefulness of the hospital in promoting the diffusion of medical and surgical knowledge, I cannot here consider."

(The Hospital as a College.)

"Chemistry, anatomy and physiology give that perspective which enables him to place man and his diseases in their proper position in the scheme of life, and afford, at the same time, that essential basis upon which alone a trustworthy experience may be built. Each one of these is a science in itself, complicated and difficult, demanding much time and labour for its acquisition, so that in the few years which are given to their study the student can only master the principles and certain of the facts upon which they are founded. Only so far as they bear upon a due understanding of the phenomena of disease do these subjects form part of the medical curriculum, and for us they are but means—essential means, it is true—to this end. A man cannot become a competent surgeon without a full knowledge of human anatomy and physiology, and the physician without physiology and chemistry flounders along in an aimless fashion, never able to gain any accurate conception of disease, practising a sort of popgun pharmacy, hitting now the malady and again the patient, he himself not knowing which.

"The primary function of this department of the university is to instruct men about disease, what it is, what are its manifestations, how it may be prevented, and how it may be cured."

(Teaching and Thinking: Address to McGill Medical School, Oct. 1st, 1894.)

"The same obligation rests on him to know and to teach the best that is known and taught in the world; on the surgeon, the obligation to know thoroughly the scientific principles on which his art is based, to be a master in the technique of his handicraft, ever studying, modifying, improving; on the physician the obligation to study the natural history of diseases, and the means for their prevention, to know the true value of regimen, diet and drugs in their treatment, ever testing, devising, thinking—and, upon both, to teach to their students habits of reliance, and to be to them examples of gentleness, forbearance and courtesy in dealing with their suffering brethren."

(Teacher and Student: Address before the University of Minnesota, 1892.)

I have studied with some care the report of Mr. Abraham Flexner in 1910 to the Carnegie Foundation, which has been referred to.

It admittedly marks a great advance both in the conception of what education is and in the realization of the only way in which medical education can, under various jurisdictions, be controlled and elevated. It is an extremely interesting analysis of a complex situation of great social importance, and it would be inexcusable if its conclusions were overlooked in dealing with medical education in this Province.

Its facts and conclusions have been violently assailed, and as warmly defended. Its value in this matter will depend upon its logic, candour and outlook.

It is perhaps desirable to state just how it came to be made. The examination which preceded it arose out of the trusts of a vast endowment to be expended for the benefit of teachers in colleges and universities of the United States, Canada and Newfoundland.

In determining what were colleges and universities within the terms of the trust, it became necessary for the trustees to investigate what were in reality

colleges and universities, many of those nominally so designated being really concerned with secondary education.

The investigation began with the colleges and the professional schools gathered about them or included in them. It extended over a long period, and one of the departments to be studied was the medical school. The situation is thus described:

"The fundamental sciences upon which medicine depends have been greatly extended. The laboratory has come to furnish alike to the physician and to the surgeon a new means for diagnosing and combatting disease. The education of the medical practitioner under these changed conditions makes entirely different demands in respect to both preliminary and professional training.

"Under these conditions, and in the face of the advancing standards of the best medical schools, it was clear that the time had come when the relation of professional education in medicine to the general system of education should be clearly defined. The first step towards such a clear understanding was to ascertain the facts concerning medical education and the medical schools themselves at the present time. In accordance, therefore, with the recommendation of the president and executive committee, the trustees of the Carnegie Foundation, at their meeting in November, 1908, authorized a study and report upon the schools of medicine and law in the United States, and appropriated the money necessary for this undertaking. The present report upon medical education, prepared under the direction of the Foundation by Mr. Abraham Flexner, is the first result of that action.

"No effort has been spared to procure accurate and detailed information as to the facilities, resources and methods of instruction of the medical schools. They have not only been separately visited, but every statement made in regard to each detail has been carefully checked with the data in possession of the American Medical Association, likewise obtained by personal inspection, and with the record of the Association of American Colleges, so far as its membership extends. The details, as stated, go forth with the sanction of at least two, and frequently more, independent observers.

"In making this study, the schools of all medical sects have been included. It is clear that so long as a man is to practise medicine, the public is equally concerned in his right preparation for that profession, whatever he calls himself—allopath, homeopath, eclectic, osteopath or whatnot. It is equally clear that he should be grounded in the fundamental sciences upon which medicine rests, whether he practises under one name or under another.

"One of the problems of the future is to educate the public itself to appreciate the fact that very seldom, under existing conditions, does a patient receive the best aid which it is possible to give him in the present state of medicine, and that this is due mainly to the fact that a vast army of men is admitted to the practice of medicine who are untrained in sciences fundamental to the profession and quite without a sufficient experience with disease. A right education of public opinion is one of the problems of future medical education.

"Until recently, the conduct of a medical school was a profitable business, for the methods of instruction were mainly didactic. As the need for laboratories has become more keenly felt, the expenses of an efficient medical school have been greatly increased. The inadequacy of many of these schools may be judged from the fact that nearly half of all our medical schools have incomes below $10,000, and these incomes determine the quality of instruction that they can and do offer.

"The day has gone by when any university can retain the respect of educated men, or when it can fulfil its duty to education, by retaining a low grade professional school for the sake of its own institutional completeness.

"The development which is here suggested for medical education is conditioned largely upon three factors: first, upon the creation of a public opinion which shall discriminate between the ill-trained and the rightly-trained physician, and which will also insist upon the enactment of such laws as will require all practitioners of medicine, whether they belong to one sect or another, to ground themselves in the fundamentals upon which medical science rests; secondly, upon the universities and their attitude towards medical standards and medical support; finally, upon the attitude of the members of the medical profession towards the standards of their own practice and upon their sense of honour with respect to their own profession.

"The interests of the general public have been so greatly lost sight of in this matter that the public has in large measure forgotten that it has any interests to protect. And yet in no other way does education more closely touch the individual than in the quality of medical training which the institutions of the country provide. Not only the personal well-being of each citizen, but national, state and municipal sanitation rests upon the quality of the training which the medical graduate has received. The interest of the public is to have well-trained practitioners in sufficient number for the needs of society. The source whence these practitioners are to come is of far less consequence.

"While the aim of the Foundation has throughout been constructive, its attitude towards the difficulties and problems of the situation is distinctly sympathetic. The report indeed turns the light upon conditions which, instead of being fruitful and inspiring, are in many instances commonplace, in other places bad, and in still others scandalous. It is nevertheless true that no one set of men or no one school of medicine is responsible for what still remains in the form of commercial medical education. Our hope is that this report will make plain once for all that the day of the commercial medical school has passed. It will be observed that, except for a brief historical introduction, intended to show how present conditions have come about, no account is given of the past of any institution. The situation is described as it exists to-day, in the hope that out of it, quite regardless of the past, a new order may be speedily developed. There is no need now of recriminations over what has been, or of apologies by way of defending a regime practically obsolete. Let us address ourselves resolutely to the task of reconstructing the American medical school on the lines of the highest modern ideals of efficiency, and in accordance with the finest conceptions of public service.

"We have seen how an empirical training of varying excellence, secured through attendance on a preceptor, gave way to the didactic method, which simply communicated a set body of doctrines of very uneven value; how in our own day this didactic school has capitulated to a procedure that seeks, as far as may be, to escape empiricism, in order to base the practice of medicine on observed facts of the same order and cogency as pass muster in other fields of pure and applied science. The apprentice saw disease; the didactic pupil heard and read about it; now once more the medical student returns to the patient, whom in the main he left when he parted with his preceptor. But he returns, relying no longer altogether on the senses with which nature endowed him, but with those senses made infinitely more acute, more accurate, and more helpful by the processes and the instruments which the last half-century's progress has

placed at his disposal. This is the meaning of the altered aspect of medical training; the old preceptor, be he never so able, could at best feel, see, smell, listen, with his unaided senses. His achievements are not indeed to be lightly dismissed; for his sole reliance upon his senses greatly augmented their power. Succeed as he might, however, his possibilities in the way of reducing, differentiating, and interpreting phenomena, or significant aspects of phenomena, were abruptly limited by his natural powers. These powers are nowadays easily enough transcended. The self-registering thermometer, the stethoscope, the microscope, the correlation of observed symptoms with the outgivings of chemical analysis and biological experimentation, enormously extend the physician's range. He perceives more speedily and more accurately what he is actually dealing with; he knows with far greater assurance the merits or the limitations of the agents which he is in position to invoke. Though the field of knowledge and certainty is even yet far from co-extensive with the field of disease and injury, it is, as far as it goes, open to quick, intelligent and effective action.

"But the physician's function is fast becoming social and preventive, rather than individual and curative. Upon him society relies to ascertain, and, through measures essentially educational, to enforce the conditions that prevent disease and make positively for physical and moral well-being. It goes without saying that this type of doctor is first of all an educated man.

"It is universally conceded that medical education cannot be conducted on proper lines at a profit—or even at cost; but it does not follow that it has therefore ceased to 'pay.' It is commonly represented that medical schools are benevolent enterprises, to which selfish financial considerations are nowadays quite alien. Such is not even generally the case. Our best medical schools are indeed far from self-supporting. They absorb the income of large endowments, or burden seriously the general resources of their respective universities. But these institutions constitute but a small fraction of the medical schools of the country. The others pay in one or more of several ways, if 'paying' is understood to mean that the fees do more than meet the expenses of running the school. This use of terms is entirely justifiable; for if fees alone are inadequate to meet the running expenses of an up-to-date medical school, then the difference between actual expenditure on instruction, with its essential incidentals, and the total fee income of the school is profit, whatever the use to which it is applied. In the worst cases this sum is great, and goes into the pockets of the teachers; in many others it may not be large in any single year, though its total over a stretch of years may be quite sufficient to have altered materially the complexion of the institution. In these schools an annual balance to the good is obtained for distribution by slighting general equipment, by over-working laboratory teachers, by wholly omitting certain branches, by leaving certain departments relatively undeveloped, or by resisting any decided elevation of standards.

"The Toronto (592 students) medical budget is about $85,000, as against $64,500 received in fees; McGill (328 students) $77,000, as against $43,750 received in fees.

"In Canada the existing ratio of physicians to population is 1:1030. The estimated increase of population last year was 239,516, requiring 160 new physicians; losses by death are estimated at 90. As the country is thinly settled and doctors much less abundant than in the United States, let us suppose these replaced man for man; 250 more doctors would be annually required. The task of supplying them could be for the moment safely left to the universities of Toronto and Manitoba, to McGill and to Laval at Quebec.

"Prior to the placing of medicine on a scientific basis, sectarianism was, of course, inevitable. Everyone started with some sort of pre-conceived notion; and from a logical point of view one preconception is as good as another. Allopathy was just as sectarian as homeopathy. Indeed, homeopathy was the inevitable retort to allopathy. If one man 'believes' in dissimilars, contrary suggestion is certain to provide another who will stake his life on similars; the champion of big doses will be confronted by the champion of little ones. But now that allopathy has surrendered to modern medicine, is not homeopathy borne on the same current into the same harbour?

"Modern medicine has, therefore, as little sympathy for allopathy as for homeopathy. It simply denies outright the relevancy or value of either doctrine. It wants not dogma, but facts. It countenances no presupposition that is not common to it with all the natural sciences, with all logical thinking.

"The sectarian, on the other hand, begins with his mind made up. He possesses in advance a general formula, which the particular instance is going to illustrate, verify, re-affirm, even though he may not know just how. One may be sure that facts so read will make good what is expected of them; that only that will be seen which will sustain its expected function; that every aspect noted will be dutifully loyal to the revelation in whose favour the observer is predisposed; the human mind is so constituted.

"The logical position of medical sectarians to-day is self-contradictory. They have practically accepted the curriculum as it has been worked out on the scientific basis. They teach pathology, bacteriology, clinical microscopy. They are thereby committed to the scientific method; for they aim to train the student to ascertain and interpret facts in the accepted scientific manner. He may even learn his sciences in the same laboratory as the non-sectarian. But scientific method cannot be limited to the first half of medical education. The same method, the same attitude of mind, must consistently permeate the entire process. The sectarian, therefore, in effect contradicts himself when, having pursued or having agreed to pursue the normal scientific curriculum with his student for two years, he at the beginning of the third year produces a novel principle and requires that thenceforth the student effect a compromise between science and revelation.

"Sectarian institutions do not exist in Canada; in the United States there are 32 of them, of which 15 are homeopathic, 8 eclectic, 1 physiomedical, and 8 osteopathic.

"One may begin with science and work through the entire medical curriculum consistently, exposing everything to the same sort of test; or one may begin with a dogmatic assertion and resolutely refuse to entertain anything at variance with it. But one cannot do both. One cannot simultaneously assert science and dogma; one cannot travel half the road under the former banner, in the hope of taking up the latter, too, at the middle of the march. Science, once embraced, will conquer the whole. Homeopathy has two options; one to withdraw into the isolation in which alone any peculiar tenet can maintain itself; the other to put that tenet into the melting-pot. Historically it undoubtedly played an important part in discrediting empirical allopathy. But laboratories of physiology and pharmacology are now doing that work far more effectively than homeopathy; and they are at the same time performing a constructive task for which homeopathy, as such, is unfitted.

"Whatever his notions on the subject of treatment, the osteopath needs to be trained to recognize disease and to differentiate one disease from another quite as carefully as any other medical practitioner. Our account of the sect proceeds wholly from this point of view. Whether they use drugs or do not use them,

whether some use them while others do not, does not affect this fundamental question. Whatever they do, they must know the body, in health and disease, before they can possibly know whether there is an occasion for osteopathic intervention, and if so, at what point, to what extent, etc. All physicians, summoned to see the sick, are confronted with precisely the same crisis: a body out of order. No matter to what remedial procedure they incline—medical, surgical or manipulative—they must first ascertain what is the trouble. There is only one way to do that. The osteopaths admit it, when they teach physiology, pathology, chemistry, microscopy.

"The law may require that all practitioners of the healing art comply with a rigidly enforced preliminary educational standard; that every school possess the requisite facilities; that every licensed physician demonstrate a practical knowledge of the body and its affections. To these terms no reasonable person can object; the good sense of society can enforce them upon reasonable and unreasonable alike. From medical sects that can live on these conditions the public will suffer little more harm than it is destined to suffer anyhow from the necessary incompleteness of human knowledge and the necessary defects of human skill."

SUPPORTING STATEMENT "E."

Christian Science.

In a pamphlet copyrighted and published by the Christian Science Publishing Company, of Boston, Mass., written by Judge Clifford P. Smith, and left with me by Mr. Hellmuth, K.C., representing the Christian scientists, appears the following:

"While the various schools of medicine differ from each other as to the nature and cure of disease, Christian science differs from them all by regarding it as primarily and essentially mental (as a product of false belief, an image of material sense, a state of mortal thought), and by curing it with a method that is at once mental and spiritual; that is, with the power of truth, in accordance with the law of mind, through the prayer of spiritual understanding. These points also mark the line between the practice of Christian science and the use of suggestion or hypnotism; in other words, Christian science uses truth as such, and utilizes the normal, natural and incessant action of spiritual law in human affairs.

"In the final analysis, sin and disease consist alike in a lack of mental rightness. Although suffering from sin does not always take a physical form, it may do so; and if it does, the physical effect follows the mental cause. Prevention or cure must therefore deal with false or evil causation, and must do so by means of true or spiritual causation. Any means short of this can result in nothing better than palliation or temporary relief."

Judge Smith quotes (p. 17) from Mrs. Eddy: "Disease is a mental state or error that truth destroys." His statement of the Christian science position is as follows:

"Christian scientists rely on the practice of their religion to prevent and cure disease, and for very good reasons. The principal reasons which obtain with most of them are these:

"(1) They have had need of relief from sin or sickness and have failed to obtain it by other means.

"(2) They have found Christian science to be a superior curative agent, even curing diseases which other systems deem incurable.

" (3) They believe it to be the divine curative agent which Christ Jesus used and commanded all his followers to use.

" (4) They believe that the practice of Christian science will ultimately overcome and abolish evil and its effects and thus deliver the human race from sin and mortality.

" For these reasons and others—such, for instance, as the fear of ill effects from other alleged remedies—a large and ever-increasing number of intelligent and law-abiding citizens rely on Christian science to prevent or cure disease, and others are constantly turning to it after other methods have failed to heal or relieve them."

From this the following conclusions are drawn:

" An ordinary education supplies all the information upon material subjects which is needed for the successful practice of Christian science. Success in this practice depends not on material knowledge, but on spiritual qualifications gained through labours that far transcend the effort required to win a college diploma. What a student could get at a medical college would not help him to heal the sick as Jesus did. Christian healing is based on the truth of spiritual being; it calls for knowledge of deific law and causation; it depends on the power that is available through the prayer of spiritual understanding; it requires that apprehension of divine principle which constitutes absolute science.

" One good and sufficient reason why the state should not impose any such restriction upon the people is that they do not need it. Any man of average intelligence is able to distinguish and choose for himself between materia medica and Christian science.

" The question whether Christian science is more or less efficacious or beneficial than the medical and surgical system is one which no group of citizens should undertake to decide for another. It is a question which each citizen is at liberty to decide for himself. At present the majority prefer to rely upon material remedies rather than upon the prayer of spiritual understanding; but there is a time in every stage of human progress when wisdom is with the minority. A true idea is always perceived by one person, then received by a few, and afterwards accepted by a substantial minority before it finds favour with the majority. Christian science has now advanced to the third stage in this course of progress, and who can say that it will not be adopted by the majority, or even universally? Whatever the future may bring forth, the majority have and will have neither moral nor legal right to impose their preference on the minority. A minority of the people have the same right to choose Christian science as the majority have to choose something else."

The following states of the American Union specifically except the practice of Christian science from the prohibition against the unlicensed practice of what they define as medicine:

Arizona
California
Connecticut
Kentucky
Louisiana
Maine
Massachusetts
Michigan
New Hampshire
North Carolina
North and South Dakota
Tennessee

The following states permit the practice of religious beliefs or tenets in the ministration of the sick:

Colorado
Georgia
Illinois
Kansas
New York
Utah
Vermont
Virginia
Washington

From the above, it appears that about one-half of the states of the American Union either expressly or tacitly admit the practice of Christian science in the cure of the sick where its practitioners follow no other method of healing than prayer.

In England there is no prohibition, except that no fees can be recovered.

Does the permitting of Christian scientists without let or hindrance to practise their methods exhaust the whole question?

I have no doubt that, in so far as it is effective in cases in which mental errors produce morbid conditions, or where the psychic effort of faith and hope is really helpful, Christian science may be considered a useful method of treatment. But in many cases its substitution for different and usual medical and surgical methods results in downright harm.

In the Province of Ontario the courts have decided that those permitting its exercise in respect to children, instead of providing tried medical assistance, are guilty of an offence against the Criminal Code.

It is true that this decision depends upon the opinions expressed by the court, that necessaries in the case of children included medical attendance when they were ill. Allowing Christian science to practise its tenets without penalty will not impair that determination, and this should be made clear in any legislation which may be enacted. And where its practitioners come in contact with disease, it seems hardly fair or reasonable that, so far as public health and welfare are concerned, there should not be required a sufficient knowledge of elementary medicine or of health and disease to prevent contagious and infectious diseases being unrecognized. To insist on this knowledge is not to take away the right of the individual to trust himself to the efficacy of the treatment, absent or present, which depends in large measure upon the mental and spiritual. Success in this practice may well depend on spiritual qualifications, but does not exclude the operation of common sense, based on knowledge, in discerning the disease from which the patient may be suffering. Either the Christian science practitioner must possess that information, or it must be supplied by someone else.

It may be sufficient to permit the practice of the tenets of their religion by adherents of Christian science, coupled with a penalty for undertaking the cure of the sick, in cases where the public health is involved, leaving it to the courts to inflict the penalty where notice is not given to the authorities. But it seems to me that to allow attendance upon disease without any precaution against the effects of wrong diagnosis, or without sufficient education to discern whether the method proposed is properly applicable, is to put a premium upon ignorance.

The difficulty of requiring Christian science practitioners to qualify to the limited extent I have indicated lies in their total repudiation of the usefulness of any, even the most elementary, medical knowledge.

Upon the whole, my solution of this particular difficulty would be to leave the matter in the hands of the law, exacting a penalty sufficiently onerous to compel the use of common sense in dealing with each case, and deterring those who affect the methods of Christian science from ignoring the requirements which have been determined to be necessary for insuring the public against the spread of preventible disease.

I should perhaps add that my recommendation is in line with, though it goes farther than, the position taken in California, with the approval of Judge Clifford P. Smith. In the Bulletin of the California Board of Health, January-February, 1917, handed in by Judge Smith, a communication from Mr. Van Arsdale, of the Christian Science Committee on Publication for South California, appears. He writes to his Christian science brethren as follows:

"The law does not require anyone but a medical doctor to have expert ability to recognize infectious or contagious diseases, but it does require all citizens to have the knowledge of human health and disease possessed by all intelligent persons, and to act as stated in the statutes mentioned and quoted from."

SUPPORTING STATEMENT "F."

Dentists.

The Royal College of Dental Surgeons of Ontario is an incorporated body, dating from 1868, and it educates, examines and licenses the students in dentistry.

It is authorized to establish a School of Dentistry in Toronto; to fix and determine the standard for matriculation, the curriculum of studies to be pursued by students, the number of lectures to be attended, the examination to be passed and the fees to be paid in order to obtain a license to practise dentistry in Ontario.

The School of Dentistry was established in 1875, and it now occupies a fine and well-equipped building on College Street.

In 1908 a sale of the old building produced an amount sufficient to enable the present college to be built.

The School of Dentistry—which educates students for their certificate as Licentiates of Dental Surgery—is operated by the College, and any profit on its operations is paid over to the College.

Thus, in 1910-11 there was paid over		$6,018 90
1911-12	" "	5,000 00
1912-13	" "	7,859 86
1913-14	" "	11,000 00
1914-15	" "	9,000 00
1915-16	" "	15,136 84
Making a total in six years of		$54,015 60
or an average of $9,002.60 per annum.		

The lecture fees received by the School of Dentistry are as follows:

1910-11	$23,075 00
1911-12	26,675 00
1912-13	27,725 50
1913-14	34,414 00
1914-15	34,261 50
1915-16	40,103 00
Making a total of	$186,254 00

or an average of $31,042.33 per annum. Out of this is paid the expenses of operating the School, paying salaries and all running expenses, the balance being turned over to the College, as I have mentioned.

Taking the financial statement of the Royal College of Dental Surgeons, it would appear that its main sources of revenue are the surplus derived out of the fees paid by students in attendance at lectures, such surplus amounting to an average of $9,002.60 per annum, and the matriculation examination and licentiate fees, which total (in the same six years) $29,197.89, and give an average of $4,866.31 yearly.

Out of these receipts there are paid the general expenses of the Board of Directors of the College, including the salaries of the secretary and the expenses of his office, examination expenses, repairs to building, etc. In addition to this, fees are paid to the members of the Board for attending its meetings. These amount to $4,701.65 in five years—there being apparently no allowances paid for the year 1911-12.

There are eight members of the Board, so that the average yearly expense is $940.00, or about $117.50 for each member, including one Toronto member and the secretary. The average surplus of receipts beyond expenditures carried over yearly by the College in the six years mentioned would amount to $5,601.00, out of which has been paid $10,000 on the principal of the mortgage.

The present balance sheet of the Royal College of Dental Surgeons is as follows:

ESTIMATED BALANCE SHEET.

(April 27, 1916.)

Assets.

College real estate and buildings (estimated)		$153,000 00
College equipment (reduced to)		19,000 00
Licentiate fees outstanding	$413 00	
Less paid in advance	2 00	
		411 00
Cash on Hand and in Banks:		
Bank of Nova Scotia, Board Account	$23,192 71	
Dominion Bank, Treasurer's Account	413 37	
Petty Cash on hand	15 79	
		23,621 87
		$196,032 87

Liabilities.

Mortgage payable on buildings and real estate	$30,000 00	
Accrued interest	95 83	
		30,095 83
Unpaid Accounts:		
Expenses 1916 Board Meeting (estimated)	$750 00	
Expenses Annual Examinations and Commencement Exercises (estimated)	750 00	
Thorne, Mulholland & Co.	100 00	
		1,600 00
		$31,695 83
Surplus of Assets over Liabilities		164,337 04
		$196,032 87

From this it appears that the Board had on April 27th, 1916, on deposit $23,192.71, and that if it receives for the year ending April 27th, 1917, the average amount from the School of Dentistry, viz.: $9,002.60, it will have enough in cash to pay off the mortgage of $30,000 on the College buildings. This is practically the only liability outstanding, and when it is removed the College, if it continues to receive an annual income from the School of $9,000, or over, will early find itself in possession of a yearly surplus exceeding the $5,600 which is its average in the past six years.

The balance sheet of the School of Dentistry is as follows:—

School of Dentistry.

Receipts and Disbursements.

(Year ending April 27th, 1916.)

Receipts.

Balance forward from last year		$1,902 69
Lecture Fees:		
Balance 1914-15 Session	$94 00	
Session 1915-16	40,103 00	
		40,197 00
Class Fees		1,872 00
Deposit Fees		936 00
Surgery Fees		165 00
Supplemental Technique Courses:		
Operative Technique	$52 00	
Bacteriological Course	98 84	
		150 84
Examination Fees, Supplemental and Annual	$3,680 00	
Matriculation Fees	300 00	
		3,980 00
D. D. C. Fees		150 00
Infirmary Receipts		9,266 24
Students' Breakages, Fines and Materials		381 16
Refining Returns, Infirmary Sweeps		38 42
Janitor's Gas Account		11 83
Interest on Bank Account		357 06
Interest on Overdue Fees		213 35
Sundry Receipts		4 40
		$59,625 99

Disbursements.

Salaries, Faculty		$23,966 57
General Hospital Surgery Fees		165 00
University of Toronto, Anatomy Fees		850 00
Supplemental Technique Courses		150 84
Salaries, Office Staff		2,027 00
Salaries, Nurse and Laboratory Assistant		388 00
Salaries, Janitor's Department		1,986 25
Laboratory Infirmary and General Supplies		4,333 74
Fuel, Gas and Water		1,457 24
Office Expense, Printing and Stationery		450 03
Repairs and Renewals		381 80
Towels		89 24
Telephone		142 40
Engrossed Resolution of Appreciation Late Dr. Doherty		20 00
Chemical Department, Printed Notes		43 80
College Announcement, Torontonensis		22 50
Sundries, Petty Cash and Postage		234 80
Bank Interest and Exchange		9 05
Legal Settlement, Infirmary Patient		150 00
Deposit Fees returned to Students		936 00
Students Executive:		
University of Toronto Council	$624 00	
Class Fees, R.C.D.S.	1,248 00	
Board Grant	100 00	
		1,972 00

Board Grant to College Y.M.C.A.		25 00
American Institute of Dental Teachers:		
Membership Fee, 1916	$20 00	
Expenses of Delegates	494 40	
		514 40
National Association of Dental Faculties:		
Special Assessment		27 70
Matriculation and Examination Fees Transferred to Treasurer of Board of Directors		3,980 00
D. D. C. Fees Transferred to Dr. W. D. Cowan		150 00
		$44,473 36
Transferred to Board of Directors		15,136 84
Petty Cash on Hand		15 79
		$59,625 99

I set out all these figures for two purposes. One is to suggest that the members of the Board should agree to serve their profession without requiring to be paid for their time and attention; and the other, to direct attention to the fact that there is, and will be, a large yearly surplus, and that it should be devoted to the cause of medical education, in which dental students largely share. I recommend that hereafter examination and licentiate fees, less expenses of examination, be paid over to the university or universities, if they are using as part of their educational system more than one university, to be used for the exclusive benefit of the medical faculty, whose expenses are and will be exceptionally heavy and continually increasing. This will enable the College to meet all its expenses, but will prevent the acumulation of a surplus which will prove rather an embarrassment than an advantage. The lecture and membership fees will more than pay the expenses of the College.

Taking last year, this will work out thus:

Examination, etc., Fees Received		$3,680 00
Licentiate Fees		1,896 00
		$5,576 00
Less Expenses of Examinations		912 75
Balance		$4,653 25

The result of this payment, taking last year as a guide, would only reduce their surplus for that year from $11,810.00 to $7,157.00.

I may add that no complaints have been made before me in regard to dental education, nor as to its relations to Toronto University.

I may mention that the College has affiliated with that university, which has formulated a curriculum, on compliance with which it will confer the degree of Doctor of Dental Surgery.

There has also been formed in Canada a Dominion Dental Council. In each of the provinces of the Dominion of Canada, the Legislature has enacted legislation regulating the practice of dentistry, and in each province the Dental Act provides for a corporate body, which grants license to practise dentistry in the province. About ten years ago representatives from each of the dental corporate bodies of the nine provinces of the Dominion met to discuss the feasibility of formulating a curriculum in dentistry, holding an examination and issuing a certificate of qualification, which would admit the holder, without further examination, to registration in any, or all, of the provinces entering into the agreement, on payment of the local registration fee. Seven of the nine provinces have entered into such an

agreement, and have formed a Dominion Dental Council, composed of a duly elected representative from each of the dental corporate bodies entering into the agreement. The certificate of the Dominion Dental Council will admit the holder to registration, on payment of the local registration fee, in the Provinces of Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Manitoba, Saskatchewan and Alberta. The preliminary education which is accepted is the junior matriculation of the Education Department of Ontario, or matriculation in the Faculty of Arts of a provincial university, or a certificate that will be acceptable for registration by the General Medical Council of Great Britain.

SUPPORTING STATEMENT "G."

Optometry.

The persons who are engaged in measuring for and fitting glasses for defective eyesight desire the power to examine and license.

They disclaim any connection with the practice of medicine, contending that they are merely skilled mechanics who can fit glasses to the eye so as to correct its defects by the simple application of measurement and adaptation of lenses. Some admit that they must know enough about the eye to recognize disease either in it or affecting it. Some others say that if they fail to correct the vision, then that denotes a diseased condition.

The wearing of glasses has become so common, and the failure of eyesight so probable after a certain age, that regulation of those who profess to fit them seems an obvious and proper thing to do. The only questions are: First, can they be safely entrusted with the power to fit glasses without medical knowledge of the eye and its diseases? and second, if so, are they in a position, if given power to license, to ensure to the public a real practical knowledge of the subject?

I find that at least thirty-six states have what are called Optometry laws, and so have Manitoba, Saskatchewan and Quebec.

Optometry is generally defined as "the employment of any means, other than the use of drugs, for the measurement of the powers of vision and the adaptation of lenses for the aid thereof."

On examining the laws of the various states, it would appear that they have generally admitted those in practice when the law was passed, and have allowed practical experience of one or two years to be considered as an equivalent to a college course.

In detail, the following has been the result of the legislation upon the subject:

The States of New York, Connecticut and Arkansas have specifically required professional training and graduation from a college requiring a two years' course in optometry, while Minnesota admits after one year's course. In Arkansas, Colorado, Connecticut, Delaware, Florida, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Oklahoma, Oregon, Rhode Island, South Dakota, Utah and Washington, as an alternative either two or three years' practice in the office of a qualified optometrist is sufficient in place of college training.

In North Dakota and Montana there is no preliminary education required to qualify for the examination.

In Arizona, Idaho, Kansas, Nebraska, Nevada, New Mexico, North Carolina, Tennessee, Vermont and West Virginia neither preliminary education nor professional training is exacted.

California and Maryland require no professional training.

Indiana requires professional training, limited to a three months' course of five hours daily; and in Iowa a 910 hours' lecture course is sufficient to qualify.

In Canada the following are the standards:

In Manitoba and Saskatchewan two years' high school training is insisted upon. In the former Province the professional qualification is either graduation from a school approved by the Board of Education, or one year's practice under a registered optometrist. In Saskatchewan two months of such practice is sufficient, no college training being necessary.

Quebec has a law which requires future candidates to take a course which shall not be more than one year in the college of the Association of Optometrists and Opticians. The previous qualification was the fact of practising in that Province on 27th April, 1909.

It would appear from the foregoing that eighteen out of the thirty-six states permit practice with a qualified optometrist as a substitute for professional education, while of the remaining eighteen, ten require no preliminary or professional training as a qualification for the examination. In four more there is either no professional education required, or it is of very limited extent.

In Canada two of the three provinces which have passed optometry laws allow practice to take the place of professional education, while Quebec grants a license after a correspondence course, as well as one in which lectures are attended.

There is, therefore, not very much to assist in deciding the proper way to deal with this subject. The most hopeful sign is the creation in New York State and in Ohio of courses of some real value in the study of optics in the Universities of Columbia and Ohio. The best among the various state optometry laws is that of New York, and yet in itself it is confined to defining the subjects for examination and in approving of certain schools where optometry is taught.

The scope from an educational point of view is seen by the précis of the written examination tests in that State, which follows:

"Optometry."

"Examinations.—The examination for a certificate to practise optometry consists of written tests covering the following clearly defined subjects:

"(*a*) Theoretic optics.—The examination is restricted to the laws of reflection and refraction, as applied to mirrors, prisms, lenses and optical instruments, usually described in the chapter on light in modern text-books of physics, and in standard special treatises on light.

"(*b*) Practical optics.—The examination is confined to the construction, mounting and adjustment of ophthalmic lenses and prisms.

"(*c*) Physiologic optics.—The examination covers specifically the philosophy of the dioptric functions of the eye, and of its anomalies and their correction by lenses.

"(*d*) Theoretic optometry.—The examination includes the explanation of the various principles, methods and instruments used to detect and measure anomalies of the eye in general.

"(*e*) Practical optometry.—The examination covers the use of mechanical appliances for making examinations of the eye and measurements of the powers of vision.

"(*f*) Anatomy and physiology of the eye.—The examination includes the anatomy and physiology of the eye and its pathologic conditions."

If this is contrasted with the curriculum of Columbia University, it will be found that the latter includes mathematics, elementary physics, pathology of the eye, general hygiene and hygiene of the eye, and extends over two full years, with from sixteen to nineteen hours a week, including laboratory work.

The Columbia Announcement explains the courses thus:

"In 1910, upon the special solicitation of the Department of Education of the State of New York, and in compliance with the law of the State (Public Health Law, Chapter 45 of the consolidated laws, effective Feb. 17th, 1909), courses in practical optics for optometrists were offered for the first time in Columbia University under the supervision of the Administrative Board of Extension Teaching in connection with the Department of Physics. These courses, arranged at present in a curriculum of two years, include such subjects as mathematics, physics, theoretical optics, general anatomy and physiology, theoretical optometry, practical optometry, physiological optics and pathological conditions of the eye; and are intended to provide special training in optics for those who are or expect to be optometrists. The proper treatment of refraction-errors of the eye requires to-day on the part of the practitioner a knowledge of geometrical and physiological optics which cannot be obtained in the courses offered in the colleges or medical schools of the country."

This statement is borne out by the fact that there are only four optometrical schools registered and therefore recognized by the Regents of the New York State University (in June, 1915)—the Northern Illinois College, of Chicago, for one year; the Massachusetts School of Optometry, Boston, for two years; Columbia University, New York, for two years; Rochester School of Optometry, Rochester, N.Y., for two years.

In Connecticut, to the above four is added the Philadelphia Optical College, and no doubt both these states have now included the Ohio State University.

In explanation of the starting of this sub-department, the University of Columbia refers to what is being done as follows:

"In England a significant effect of the increased interest in these subjects is to be seen in the recent establishment of an institute of optical engineering in London, where a student will be able to pursue extensive studies in optics, both theoretical and applied; including courses not only in such subjects as physiological optics and the making, testing and fitting of spectacle lenses, but especially in the principles, design and construction of optical instruments (telescopes, microscopes, photographic apparatus, spectroscopes, projection lanterns, surveying and measuring instruments, range-finders, etc.), and where optical researches will be encouraged and systematic investigations of the methods of manufacture of optical glass (which now has to be imported from the continent) can be prosecuted. Probably the time is not far distant when the demand for such an institution in this country will have to be met."

Columbia University has consequently provided for experimental work in physics and theoretical optics, conducted in the regular college laboratory, while a special laboratory is supplied with the best modern optometrical instruments and with the mechanical appliances for making, grinding, surfacing, etc., and mounting lenses. Clinical instruction is also given.

In Ohio the course is even longer and more complete. It is thus described:

"The primary purpose of this curriculum is to properly and adequately pre-

pare its students to enter the field of optics as applied to the detection and correction of the errors of refraction, accommodation and associated functions of the eye. To this end the curriculum embodies the following essential and allied branches of instruction: (1) General science and mathematics, (2) the fundamentals of anatomy, histology, physiology and pathology of the human body, (3) special courses on the anatomy and the physiology of the eye, (4) instruction in the detection of pathological and diseased conditions of the eye, and (5) a thorough training in theoretical and practical optics and the application of optical principles to the correction of visual errors, with an adequate provision for clinical practice in both the refractive and pathological fields. Provision is also made for some elective courses, in order that the student may continue any line of instruction previously pursued or select courses which are germane to his work."

This course covers four years and includes, in addition to the subjects quoted from the New York law, human anatomy, histology, embryology, clinical practice, chemistry, qualitative analysis, mechanical drawing, English bacteriology, mathematics, pathology of the eye, physics, physiology and elementary and experimental psychology.

In the Third Report of the Massachusetts Board of Registration in Optometry, some facts and figures are given which are instructive.

I quote from the report:

"Under the provisions of the optometry law persons who had been in practice two or more years immediately preceding the passage of the Act are given, by statute, until June 1 of this year to qualify before the Board.

"It is interesting to note in this connection that of the 1,700 men who received affidavit blanks from the Board when the law went into effect, but 1,111 filed affidavits as provided by statute. It is evident, therefore, that 589 men who had previously examined eyes realized that the new law demanded standards which they were unable to meet. Of the remaining 1,111 the Board accepted the affidavits of 1,079, after careful investigation, and of this number 790 qualified. Seventy-nine new men have commenced the practice since June 1st, 1912, and at present there are 874 persons registered to practise optometry in Massachusetts, including the five original appointees to the Board, who received certificates of registration by virtue of their appointment.

"The Board is exceedingly gratified to note the great good the optometry law has accomplished in the three years of its existence. As the law contained no exemption clause, every person desiring to continue in the practice was called upon to take an examination before the Board. Wishing to be just to optometrists long in practice, a practical examination only was given, consisting principally of the examining of a patient in the presence of the Board, each applicant being examined separately and given all the time necessary to properly demonstrate his ability. While this method required the expenditure of much time, it appeared to be the fairest means to determine an applicant's competency to continue in the practice. Practically every person, however, prior to appearing before the Board, took special study and instruction.

"The Board has no appropriation from the state, depending solely upon fees derived from examinations. The fees from applicants have been ample to carry on work of the Board, but now that all the men previously in practice who desired to continue have been examined, the receipts have been materially lessened. The Board now wholly depends upon the fees of new men taking the examinations. This income will be inadequate to permit the Board to carry on its work in a thorough

and efficient manner. This same problem has confronted optometry boards in other states. In Arizona, California, Delaware, Florida, Idaho, Indiana, Kansas, Maine, Maryland, Michigan, Minnesota, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, Oklahoma, Oregon, Rhode Island, South Dakota and Utah practitioners must renew their licenses each year at a nominal fee of from $1 to $5. By this method the Board can keep in closer touch with every practitioner, and the law is made self-sustaining, no appropriation from the state being necessary."

In Minnesota the State Board of Optometry in its 1915 report refers to a practice which is somewhat unique in the character of the persons offending. It says:

"A matter which received attention prior to the taking up of the examination routine was the reported activity of auto-livery swindlers, impersonating well-known optometrists and physicians, or claiming to be associated with them in practice. It was agreed that such publicity as individual resident optometrists could give to these abuses through their local newspapers would be most effective for the time being, but that the vending of glasses as merchandize should be prohibited by law, at least such vending by itinerants, and only permitted at permanently located and established places of business, and that all house to house canvassing for the purpose of selling or fitting glasses should be made illegal."

The report adds:

"One need, made apparent by the introduction of special university courses in certain states, is higher preliminary and technical requirements; another is certain restrictions in the vending of glasses as merchandize, so that they will not be handled by unknown, irresponsible and unscrupulous persons."

The Optometrical Association of Ontario was incorporated by Letters Patent in December, 1909, for the purpose, *inter alia,* of raising the standard of optometrical education, and to advance the science of optics, to encourage its study, to collect fees for tuition, examinations and membership.

Its members consist of those who are engaged in optometrical work or interested in scientific optometry.

The Association, in October, 1916, numbered 140 members.

The chief objection made to granting what is asked by the optometrists is that they may do more harm than good in prescribing glasses for those whose defects of vision are due to diseased conditions.

It is thus put by Dr. Thorington, of Philadelphia:

"A very considerable proportion of defective eyes are the result of disease or abnormal conditions of the body. This being the case, a bill which licenses an optician to prescribe for conditions which can be recognized and treated only after years of study and training in medicine, may legalize the doing of an irreparable injury. . . . He can prescribe for the eyes of a man who is suffering from Bright's disease, or from rheumatic troubles, which diseases, and others also, directly affect the eyes, although he knows nothing about the particular disease or the general principles of anatomy, physiology and pathology."

It is stated even more strongly in the report of the Committee of State and National Legislation of the Massachusetts Medical Society in 1908.

That any law should give due weight to this objection is the opinion of Dr. Chas. Sheard, Professor of Physics in Ohio University, who, in 1910, said:

"The optometrist . . . should be acquainted with the symptoms of these various conditions (i.e., pathological and physiological), not for treatment, but as cases for the medical profession."

Another and lesser objection is that it is often impossible to accurately prescribe for glasses without the use of a mydriatic or cycloplegic, which is the use of drugs, and therefore the practice of medicine. This treatment, however, is not really indispensable, as the vast improvement of the mechanical means for eye testing has rendered these so-called aids unnecessary.

Some optometrists admit that optometry has advanced to a point where a simple knowledge of optics—the philosophy of light—is not enough to constitute an optometrist. He must also understand anatomy, physiology and pathology *so far as the eye is concerned.*

This does not, however, go the whole length of what is necessary to meet the main objection. It is not only of the eye alone, but anatomy, physiology and pathology in so far as the general conditions of the whole body react on the eye are concerned, and the knowledge should be sufficient to read the signs they disclose, reflected in the eye.

The present position both in the United States (see Dr. Lambert, the leading eye specialist in New York, p. 1,921), and in Ontario seems to be that there is not sufficient attention paid to optics in the universities in so far as they fail to provide a course sufficiently comprehensive to take in optics, both theoretical and practical, combined with a training in medicine sufficient to enable the student to guard against mistakes in treating the eye from a physical standpoint.

In Rush Medical College, for instance, the practical course in refraction (1915) is limited to 10 students, 3 terms, each including 2 hours per week for 6 weeks, although the Department of Ophthalmology has a professor, three assistant professors, 2 instructors, 3 associates and 2 assistants.

In the University of Toronto, in the Faculty of Medicine, the ophthalmological course is thus described (1916-17):

"Fourth Year.

"Ophthalmology.—A short course of didactic lectures will be given. Ample facilities will be afforded in the out-patient services for acquiring a knowledge of refraction and of the use of test-lenses; and also of the ophthalmoscope and other instruments employed in diagnosis, so that the student may become practically acquainted with methods in vogue and their application. The anatomy and relations of the eye and orbit will also be considered.

"Fifth Year.

"Instruction will be wholly clinical and practical, and will include ophthalmoscopy and its bearings; the bacteriology and pathology of the eye and adnexa; and operations.

"Otology.—There will be a short course of didactic lectures. Clinically, otology is grouped with diseases of the nose and throat."

This course appears to take (1916-17) 5 weeks on the didactic side, 2 hours a week, i.e., 10 hours; and on the clinical side, combined with ear, nose and throat, 10 weeks, 6 hours a week—60 hours.

In the fifth year a lecture of 1½ hours on the nose and eye is given weekly for the first 4½ weeks, that is 7 hours.

In the Faculty of Applied Science optics appears in the second year for 1 hour per week in the lecture room, and 1½ in the laboratory in the fall term under the Departments of Civil, Mining and Mechanical Engineering, Architecture, Analytical and Applied Chemistry, Chemical and Electrical Engineering, in the subjects. In these departments there is taught the "Laws of Reflection and

Refraction, theory of optical instruments." This course is summarized by Professor James MacCallum thus:

"Preparatory to studying refraction, the students in medicine are expected to study physics and the anatomy and physiology of the eye. They get from Professor J. C. MacLennan, the professor of Physics, sixteen lectures upon optics in regard to light, reflection, refraction, the optical properties of lenses for far sight, short sight and astigmatism—and the ophthalmometer. From Professor A. B. MacCallum, the professor of Physiology, they get a course of twenty lectures on the physiology of the eye, and its refractive defects, illustrated by experiments with the Kuhnes artificial eye, showing these defects and how lenses correct them. This is part of their third year course. In the fourth year, each student gets lectures and also a two months' course of clinical work, which includes refraction and its determination by test types, the retinoscope and the ophthalmoscope. In the fifth year, each student has a course of two months. This course also is a clinical course. Professor James MacCallum assigns patients to individual fifth year students to make the vision tests and to do refraction by means of the retinoscope, after the mydriatic has been used. This is all part of the general medical course."

In Queen's University the course in ophthalmology and optometry is given during the fourth and fifth years, and includes lectures on two days in the week and every morning practical demonstrations of the work given to the class in groups. The work in the fourth year covers anatomy and physiology, and in the fifth year diseases, pathology and treatment.

A series of lectures with special reference to the use of the retinoscope and ophthalmoscope and practical work in refraction is given to the students in groups, and they assist in all operative work.

Of this the Dean of the Medical Faculty says: "The fundamentals in ophthalmology and optometry are taught, and some practice is afforded to each student. While this is the case, no young graduate can be regarded as fully trained for such special work without post-graduate study and experience."

In the Western University what is submitted to me for 1917-18 is as follows:

"8. Eye, Ear, Nose and Throat.—A course of lectures and clinics dealing with the anatomy, physiology, methods of examination and the commoner diseases of the eye, ear, nose and throat. One lecture a week throughout the year given on Saturday morning at Victoria Hospital. One clinic a week given on Wednesday morning on public ward and out-door patients at Victoria Hospital. Seventy-five hours. Drs. Clarke and Thompson."

With regard to courses such as these the joint report and actions in 1915 of the American Ophthalmological Society and the American Medical Association, Ophthalmic Section, and the Academy of Ophthalmology and Otology is instructive. They say:

"During the past year the American Ophthalmological Society, the Section on Ophthalmology of the American Medical Association, and the American Academy of Ophthalmology and Oto-Laryngology have considered and adopted the reports of their respective committees recommending that graduate courses in ophthalmology representing at least two years of work subsequent to taking the degree of Doctor of Medicine be established in medical schools of the first class; and that such work be recognized by conferring an appropriate degree upon those who have successfully completed it.

"It seems clear that there is unanimous agreement as to the need for systematized and standardized training of those who are to practise ophthalmology. At

least five of the medical departments of important American universities have now arranged for such courses, leading up to special degrees. But already it is clear that the number of graduate students who will take the complete course leading to such degree will, in the near future, be small. Even in universities capable of furnishing facilities adequate for the training of large numbers the great majority will not meet the requirements for the higher degree.

"It is desirable that the standard of attainment for which university degrees are given should be kept fully up to the present standard of our best universities. As matters now stand, therefore, a large majority of those entering upon the practice of ophthalmology will not be reached, or directly influenced, by these standards. It is extremely desirable that all who take up ophthalmic practice as a specialty should be induced to pursue systematic courses and show proficiency therein."

SUPPORTING STATEMENT "H."

Nurses.

The first practical step towards the proper education and classification of nurses is that embodied in the Hospitals and Charitable Institutions Act, R.S.O. (1914), C. 300, S. 19, as amended in 1914. Sec. 18 now is as follows:

"Training Schools for Nurses may be conducted at Hospitals receiving aid under this Act, and when such regulations in relation thereto as may be prescribed by the Lieutenant-Governor in Council have been observed graduate nurses of such training schools may be entitled to registration in a register kept for that purpose under the direction of the Provincial Secretary, and a person so registered may be designated a Registered Nurse.

(2) "Unless registered no person shall be entitled to use the title 'Registered Nurse' either alone or in combination with any word or words or any name, title or description implying that she was registered under this Act, and any person contravening this subsection shall incur a penalty not exceeding $25, the same to be recoverable under the Ontario Summary Convictions Act."

The Lieutenant-Governor in Council designates the hospitals which are to receive public aid. This section was originally passed in 1912.

In addition to this, in the Hospitals for the Insane, the Minister under whose department these hospitals come—at present the Provincial Secretary—may approve a syllabus for the training of nurses. The superintendent of the institution has power to direct this training in accordance with this syllabus.

The registration of nurses educated at the training schools carried on in connection with hospitals receiving public aid has heretofore not been carried out under the statute quoted, but instead thereof the nurses have formed voluntary associations for this purpose. They desire that these associations should be recognized by legislation, restricting the use of certain designations in addition to that of "registered," namely: "Graduate," "trained," or "certificated," to those that have received the training in these schools.

At present the system is to require nurses who desire to be regarded as having proper qualifications to join these associations. The result of this is that no nurse is eligible unless she can show that she has not only been trained in a school carried on by a hospital, but that that education has been in a hospital containing a certain number of beds, and with a designated curriculum and length of course.

The effect of this, while reasonable from the viewpoint of the individual association, is to discriminate against those who are not so eligible. And with this result: that the association, through the establishment of a registry where nurses can be obtained, and which only admits those belonging to the association, obtains the practical control of the situation, because applicants for nurses, not having knowledge where other nurses can be obtained, naturally turn to the known registry.

Many protests have been received against this system, which it is said discriminates against nurses who are as well qualified as the members of these associations, but who, not being able to comply with their regulations, are in effect debarred from obtaining employment.

While the establishment of these associations is natural and based on a not unreasonable view, it is said that a registration by some public authority would remove any difficulty, and this is not objected to by those concerned. Indeed, those who appeared before me stated very distinctly that what they were doing was with a view to raising the standard of nursing education, but that they believed the only effective way was by proper professional or governmental control.

But mere registrations by a public authority will not do away with the objection which is an essentially practical one, unless those charged with the duty of registering are willing to afford facilities enabling the public to obtain the services of registered nurses under some regular systematic plan whereby all will have an equal chance of employment.

This would require the creation of some central department where registered nurses may be classified, and assigned to separate and congenial duties, such as hospital, private, sanitaria, public health, and visiting nursing, and also some sub-departments in the leading cities and towns to supply local needs. Until this can be accomplished, it is impossible to prevent—if prevention were advisable—such associations as exist at present. The utmost that could be urged would be that no one private association should be entitled to the exclusive use of any of the titles or descriptions indicating graduation from existing recognized institutions. And to carry this out would require existing charters, such as that of the Graduate Nurses' Association of Ontario, to be modified in that direction.

The persistent demand for competent nurses of the various classes I have mentioned seems to lead to the formation of these associations and registries to supply a want which ought to be provided by some such public registry as I have indicated, carried on with an adequate staff.

The Assistant Provincial Secretary, I am glad to say, assents to this view, and suggests that the Provincial Board of Health is the proper authority to register upon examination by the local medical health officers. This would entirely meet my views, especially if the Local Health Office kept a list of local nurses, and made provision so that nurses on that list could be got day and night.

It is of the greatest importance that nurses should be properly trained, and if the associations I have mentioned have established standards, good in themselves and in their essential features necessary to be insisted upon, it would be a backward step to deprive them of their rights without substituting for these self-imposed qualifications the educational standards fixed upon by the public authority. They are perhaps rather exclusive in their regulations, but this is not wholly an evil, having regard to the fact that there are now some 2,200 nurses resident in Ontario who have graduated from 61 Ontario hospitals, some very small. There are annually about 400 who go through the hospital schools.

Another matter that has been somewhat overlooked in the discussion before me as to the rights of nurses in what are called private hospitals is that the experience there is necessarily limited, both by the lack of variety of diseases, some of which are never seen outside a public poor ward, and also by the dislike of paying patients to be a subject for instruction for her attendants or others.

In the State of New York the system of registering, as well as accrediting, training schools has been adopted as is done with medical colleges. The registered schools must be connected with a hospital or sanitarium having not less than 50 beds and a daily average of 30 patients, and the hospital or sanitarium must provide experience in the medical, surgical, obstetrical and pediatric departments, and the schools must give both practical and theoretical instruction as well in nursing sick children, diet, cooking, food values, bacteriology and contagious diseases.

The Public Health laws of the state require each registered nurse to file every three years with the County Clerk the certificate of registration, and an affidavit of identity and the place of residence.

The Board of Examiners includes two members nominated by the New York State Nurses' Association.

The proposed amending law of 1916—which has not yet been adopted—provided for an Advisory Council consisting of nominees from the State Medical Board, the State Board of Health, the New York City Department of Health, the hospitals, the training schools for nurses, the State Nurses' Association, and the League of Nursing Education to advise the Board of Regents of the New York State University as to the courses to be pursued, the standards to be maintained in training schools, and the rules for the examination of nurses.

In addition to New York, there are forty-two states which have state registration for nurses. It also obtains in Manitoba, New Zealand, Queensland, Australia and South Africa. These laws include not merely recording and issuing certificates, but provide for education and examination.

I should like to direct attention to the views of Miss Nutting, Professor of Nursing and Health and Director of the Women's College attached to Columbia University, New York. She discusses many phases in hospital training, and points out how in many cases the school is virtually a hospital department. She says:

"It is pretty clear that a sound educational scheme will find it difficult to survive such a relationship, since the purposes of the hospital and training school are not only not identical, but are at points in actual conflict. The superintendent of a training school for nurses holds an almost impossible situation. She has to carry on the nursing work of the hospital, difficult, delicate, complex and responsible work, almost entirely through a body of students, and these students are increasingly unwilling to be so largely utilized for the benefit of hospitals, and are protesting against the conditions under which they live and work, and against the kind of instruction which is offered them. Meanwhile, the public is asking that nurses shall be better taught. Training schools need to study their problem to-day very carefully. They should not go blindly along trying to do as they did twenty-five or thirty years ago, when there were few hospitals and almost no opportunities for work open to women except nursing and teaching, and consequently there were many women of a very high type willing to enter hospitals, work the unconscionable hours which were—and still are—required for the sake of picking up some useful knowledge and experience. The training schools for nurses have to compete to-day with many other professional schools for women, and they must find a way of conforming to modern ideas and needs.

"The weakness in the situation is the fact that hospitals, generally speaking, continue to look to the students in their training schools for the performance of all nursing work, including, frequently, much which is purely domestic. It is not unlike the old apprenticeship system, and shows the same evils—long hours of work, insufficient number of workers, heavy and unsuitable tasks, poor living conditions, meagre and inadequate instruction, and, finally, the direct exploitation of students for commercial advantage by supplying private patients with their services.

"These are generally characteristics of many training schools, and are so well recognized that they react unfavourably upon nursing as a calling, lower its status as a profession in the public mind, and serve to keep out of training schools large numbers of the women who could bring excellent qualifications for this important work, and are urgently needed in it.

"There are, of course, a good many of the old schools of high standing in which living conditions are excellent and nurses are carefully trained. But some of the conditions I have described will be found in most of those schools. Efforts to improve the character of the teaching are going on steadily in our training schools, notably in those which have recently been established under the direction of universities."

A distinction she makes should never be lost sight of:

"The hospital establishes a training school not primarily for the purpose of training nurses but for its own convenience, as a measure of economy, to get its work done easily, conveniently and inexpensively. The other—the university—starts out with the idea that the primary purpose of a school is to educate, and its work is planned and conducted solely with that end in view. It thinks of the needs of the student-nurse, and her preparation for her future work, rather than of the current needs of the hospital for labour. The university knows how teaching should be carried on, that is its business. It has resources, teachers, laboratories, libraries and other equipment to place at the disposal of the student-nurse. The hospital has no means with which to supply these in any adequate manner. Its chief concern is to get its work done, and it looks with impatience upon any scheme of instruction which makes serious demands upon the student's time."

She adds from her experience the following difficulties of the superintendent of nurses:

"I really think hers is the most perplexing problem, because the direct necessity of caring properly for a body of sick people is in her hands. She is naturally anxious to give them the very best care, but to accomplish this she has to rely always, and almost entirely, on students who have other duties which must be performed. A body of students, no matter how willing or capable, is not equal to the task of taking full care of a large body of sick people, and I see no way but for every hospital to pay for a reasonable proportion of its work, just as other institutions do. It is really almost unthinkable, for instance, that hospitals should be requiring students to work twelve hours out of the twenty-four, or to spend six months out of a three-year course on night duty, to save expense.

"The system of night work for students was established forty or fifty years ago, when only mature and experienced women were admitted to training schools. For many years no one under twenty-five years of age could get in, but now we are admitting young girls of eighteen or nineteen years, and permitting them to work at night for twelve hours. The whole system needs a searching investigation.

"The superintendent of nurses is generally the saving factor in the situation,

and should be supported and encouraged by the public in her efforts to deal justly by the students under her charge.

"The crux of the situation lies in the economic value of the student to the hospital. The direct problem before us is how to place training schools upon a sound financial basis. Then, and then only, can there be real freedom to develop the training of nurses on its merits as an educational question in which the hospital plays a part, a large one, but which it never controls. The opposition to improvements in the education of nurses comes largely from those who are interested in retaining their services as students, and who fear any step forward which may result in diminishing the source of supply."

This is a very valuable survey of the field, and from an inside standpoint.

In regard to the supply and training of nurses other than those who are able to attend the regular hospital course, I might mention some very important considerations that are being entirely lost sight of in Ontario, and which are emphasized in the report of a special committee appointed by the American Hospital Association and presented at the Convention in September, 1916. As the Committee included the lamented Dr. R. Bruce Smith, its views have peculiar interest.

I quote some passages:

"It is clearly apparent to all who have studied the subject with the varied needs of the sick in view that too large a proportion of one certain type or class of nurses is being produced, and that large portions of the nursing field are being neglected in the present system of training nurses.

"That provision for community care of patients suffering from acute contagious diseases is sadly lacking, and that as a measure of public health and safety very definite efforts should be made to increase hospital accommodation for such patients, and also to train nurses in larger numbers who are willing to assume responsibility for the proper care of patients suffering from this class of diseases in the home.

"That information gleaned from a great variety of sources goes to show what is undoubtedly true, that numerous as are the admissions to hospitals, the sick thus admitted represent but a small fraction of the sick which have to be cared for. Apart from the surgical patients, the vast majority of the sick, especially obstetrical and medical patients, and chronic invalids are cared for in the home. Statistics presented recently before the Academy of Medicine, New York, stated that ninety per cent. of those who are now doing nursing in America have had no hospital training.

"That the large number of newer openings for graduate nurses in social service, welfare work, public health work, and various other lines of philanthropy, combined with the increased demands for institutional nurses, have reduced considerably the number of nurses who would otherwise be available for nursing in homes.

"That there is a large part of the population in all states and provinces which is unable financially to meet the expense of a graduate nurse at regular rates, even if sufficient graduate nurses were available to meet the demand.

"That the testimony of a large body of physicians, social workers and interested workers for human betterment goes to show that the needs in sickness in middle-class homes are not always best met by a highly skilled graduate nurse, but that a less expensive worker who can combine ordinary care of the sick with the care of the home is often more desirable, both from the standpoint of economy and efficiency.

"That two important difficulties exist with this class of workers which call for serious attention. First, they are (often through no fault of their own) pressed into service as nurses on critical cases where a high degree of skill is needed. Second, the tendency in some places, and with some untrained and unsupervised workers, has been to unduly increase the price of such service to the public. Experience has shown that both of these difficulties can be met by proper organization and management.

"That there is a large gap in most communities not now filled by hospital service, visiting nursing or by private nursing as at present organized and conducted.

"That the needs of all classes of people and the nursing required in all classes of diseases should be considered as a whole in the development of any satisfactory system of nursing education, in every state and province."

The committee, in its more detailed consideration of the subject, state their views as follows:

"After prolonged consideration, the committee reached the conclusion that for the present it is desirable to endeavour to develop the efficiency of this class of nurses in the homes, with class and bedside teaching, under the supervision, instruction and general direction of a fully qualified graduate nurse, backed by a responsible local organization; also that constant efforts should be made to build up in every community a reliable corps of practical household nurses for service in homes at moderate prices, keeping such workers under instruction in this kind of service, year after year, as long as satisfactory. They should not be led to believe that they can graduate, nor that they can finish any prescribed course in nursing. They should not be given nursing certificates of any kind.

"This class of workers should be developed for the two-fold purpose of the care of the sick in the home and the care of the home during sickness—always with the assistance of, and under the general direction of, a graduate nurse, and, in the last resort, of a responsible organization committed to the object of serving the home nursing needs of the community in sickness.

"A careful investigation of methods and plans for meeting the practical and many-sided problems involved in this work has led the committee to call the attention of the American Hospital Association to the plans for organization and for the home care of the sick which are outlined by the Bureau for Organizing Home Care for the Sick, which exists to assist in the promotion of local organizations for neighbourhood co-operation in the general care of sickness in the home. A considerable part of the work of this bureau has consisted, and will continue to consist of investigation and research such as is now going on in several places. A fundamental feature of its work is to start with the home, studying its needs on the case system, and organizing its work and shaping its plans in accordance with the findings.

"The plans on which such work may be conducted have been given practical test, first in Brattleboro, Vermont, and have been adopted wholly or in part by organizations doing similar work in Detroit, Buffalo, Boston and elsewhere in New England. The methods that have been evolved by an experiment extending over several years seem to be equally applicable to large and small communities.

"The object of a local association of this character may be briefly stated to be 'to do what is possible to supply those needs in sickness that are not now properly covered by hospital service, by visiting nurses, or by unorganized private nursing.' It aims 'to become a medium of exchange between those who need help and those who can give help in sickness or emergency, and to meet the practical needs of the community.'

"The plans include the establishment of a community or home nursing office which will serve as a centre for a given territory and a clearing-house for several grades and kinds of workers, who are provided to meet a need in time of sickness in middle-class homes. Such an organization does not attempt to dispense charity, but does attempt to furnish at cost such service as is needed. It aims to furnish, where necessary, a graduate nurse for service through the acute stage of a disease, to replace her by a less skilled worker when highly skilled care is no longer needed, so that the valuable services of a fully trained nurse may be more generally utilized where highly skilled nursing is needed, but is not wasted where others less skilled will fully meet the needs.

"The office is managed on a business basis, and is in charge of a graduate nurse, who provides for the supervision of such household nurses and other helpers as are needed in sickness. The office has on its lists names and addresses of persons who are free to go to a home and serve by the week, those who can serve for a day or part of a day, those who do cooking or washing, or are able to care for children, and various other classes of helpers who are able to fill gaps in homes in which sickness has entered. It does not find the money to pay these workers, but endeavours to furnish them at rates which the family or friends can meet."

In connection with what is contained in their report, I might mention that in the city of Detroit, Michigan, I found an institution in full swing managed by a graduate nurse, a Canadian by birth, called the Detroit Home Nursing Association, where instruction in how to help the sick poor is systematically given to women willing to go out and do this greatly needed work. It has its counterpart in only one or two places in the United States.

Miss Carson, its superintendent, was good enough to give me a very full statement of the inception of the work, its *modus operandi* and its success, and I commend her remarks to the attention of all those interested in medical welfare work.

The women who are trained are those who need to make something to aid the household income, or who are thrown on their own resources after having passed the age limit for professional training as nurses.

The method of training is very practical. The instruction includes bed-making for the sick, the use of antiseptic solutions and their mixture, how to read and understand a thermometer, and numerous other small services, as well as training as to diet, maternity cases and fever cases.

Miss Carson, who is herself a graduate nurse, instructs the applicants, fixes their wages in each case, and superintends what they do. They work with a physician, under supervision, and fill a great want among a class not needing nor able to pay for a graduate nurse.

This phase of public health nursing is one which, owing partly to the start made by the Metropolitan Life Insurance Company of New York, by the extension of medical benefits to workmen under compensation acts (in Ontario this was done last year), and by the example given in the British National Health Insurance Act, is sure to spread far beyond the regular graduate nurse.

In Great Britain nursing care is one of the benefits which may be contributed to, but this is optional only. The Metropolitan Life Insurance Company, as outlined in the statement given before me by the secretary of the Welfare Department, which will be found at p. 1,983 in the proceedings before the Commission, expended $553,900 in 1915 in looking after the health of its policy holders through this medium.

I would also direct attention to the papers which accompany this report, written by J. F. Hanly, M.D., of Almonte, Ontario, and by M. Powers, M.O.H., of Rockland, Ontario, on the feasibility of arranging for the services of nurses in rural communities.

In Ontario home nursing for the Metropolitan Life Insurance Co. has been done through the Victorian Order of Nurses. While all this has been accomplished by graduate nurses, it will not be possible to extend it widely without heavily overtaxing the powers of the regular hospital training schools.

The need, therefore, for a speedy and efficient handling of this problem, both of securing and properly training for welfare work the nurses needed by those who cannot afford to pay the larger fees received by graduate nurses, is apparent.

It cannot be solved by me theoretically, but must be done by someone who will take the trouble to acquaint himself with local conditions, who will be prepared to recognize the valuable work at present being done, and try and assist it into such channels as will double its efficiency without impairing its spirit.

Owing to the astonishing spread of the spirit of what is called "welfare work," manufacturers, life insurance companies, compensation boards and municipalities will all find themselves in need of nurses who, if trained to meet the common needs of sickness or maternity in the homes of workmen, will be of great value to the community.

LIST OF THOSE WHO APPEARED BEFORE THE COMMISSION.

Academy of Medicine—
Dr. W. H. B. Aikins, President, Academy of Medicine.
Dr. Arthur Jukes Johnson.
Dr. D. J. Gibb Wishart, Professor of Oto-Laryngology.
Dr. Goldwin Howland.
Dr. Herbert A. Bruce.
Dr. J. H. Elliott.
Dr. Clarence L. Starr.
Dr. Albert A. Macdonald.
Dr. J. G. Fitzgerald.
Dr. Gordon G. Copeland.
Dr. W. A. Young.
Dr. W. Arrell, Hamilton.
Dr. H. B. Anderson.

Medical Council of Canada—
Dr. R. W. Powell, Registrar.

College of Physicians and Surgeons—
Mr. H. S. Osler, K.C.
Dr. H. Wilberforce Aikins, Registrar.
Dr. H. S. Griffin, Hamilton.
Dr. Edmund E. King, President.
Dr. J. S. Hart.

Disciplinary Powers—
F. M. Field, K.C.
Dr. A. Crichton.
H. S. Osler, K.C.

Midwives—
Dr. Edmund E. King.
Mr. R. E. Mills,
Miss Sarah Price.
Miss Matilda Simoni.
Dr. H. Wilberforce Aikins.
Dr. H. S. Griffin.

Ontario Medical Association—
Dr. R. A. Reeve.
Dr. Angus McKinnon.
Dr. H. B. Anderson.
Dr. Henry Howitt, Guelph.
Dr. John Ferguson.
Dr. Stewart Cameron, Peterboro.
Dr. H. J. Hamilton.
Dr. Chas. Sheard.
Dr. A. F. McKenzie, Oakville.
Dr. A. Dalton Smith, Mitchell.
Dr. I. Olmsted, Hamilton.

University of Toronto—
Sir Robert Falconer, K.C.M.G., President.
Dr. C. K. Clarke, Supt. Toronto General Hospital
Mr. Z. A. Lash, K.C.

Evidence re Conduct of Examinations—
Dr. Alex. McPhedran.
Dr. Wm. Goldie.
Dr. Clarence L. Starr.
Dr. F. N. G. Starr.
Dr. D. J. Gibb Wishart.
Dr. Chas. E. Jarvis.

Queen's University, Kingston—
Hamilton Cassels, K. C., Toronto.
Prof. J. C. Connell, Dean, Kingston.
Dr. Edward Ryan, "
Prof. W. T. Connell, M.D., "
Prof. A. P. Knight, M.D., "
Prof. James Third, M.D., "
Prof. Wm. Gibson, M.D., "
Principal Gordon, "
Mr. R. Y. Chown, Registrar, "

Regiopolis College—
Dr. Wm. Gibson, Kingston.

Western University, London—
Dr. H. A. McCallum, Dean of Medical Faculty.
Dr. Paul S. McKibbon, Asst. Dean of Faculty.
Dr. H. W. Hill.
Dr. Robert Ferguson.
Dr. F. R. Miller.
Dr. Barker, Prof. of Physics.
Dr. Hadley Williams.
Dr. John A. McGregor.
C. R. Somerville.

McGill University, Montreal—
Prof. Henry A. Lafleur, M.D.
Prof. R. F. Ruttan, M.D.
Prof. Alex. D. Blackader, Acting Dean.
Prof. Geo. E. Armstrong, M.D.
Prof. J. W. Scane, M.D.

Laval University, Montreal—
Dean Lachapelle.
Prof. L. D. Mignault, M.D.
Prof. L. de Lotbiniere Harwood, M.D.
Prof. J. J. Guerin, M.D.
Prof. A. A. Foucher, M.D.

Provincial Board of Health—
Major J. W. S. McCullough, M.D., Chairman.
Dr. Bell.

Dentists—
Dr. Walter E. Willmott, Secy. Royal College of Dental Surgeons.
Dr. Wallace Seccombe.
Dr. A. D. A. Mason.
Dr. F. J. Conboy.
Dr. W. Cecil Trotter.
Dr. R. D. Thornton, Ontario Dental Society.

Physical Therapy—
Prof. J. C. McLennan, C.M.G., Prof. of Physics, Toronto University.
Dr. A. C. McKay, Principal, Toronto Technical School.
Capt. Tait McKenzie, R.A.M.C., Prof. of Physics, University of Pennsylvania.
Dr. Adolf Meyer, Psychiatrist in Chief, Johns Hopkins University, Baltimore, M.D.
Dr. Richards, in charge of the Hydro and Electro-therapeutic Department, Toronto General Hospital.
Dr. Geo. W. Ross, Acting Prof. of Therapeutics, Toronto University.
Surgeon-General J. T. Fotheringham.
Lieut-Col. I. H. Cameron.
Dr. C. R. Dickson.
Miss Ella Lambert.
Surgeon-General G. C. Jones.
Dr. Norman Brown, Director, Dept. of Physical Therapeutics, Royal Victoria Hospital, Montreal.

Dr. A. H. Desloges, Director, Electro and Hydro-therapeutic Department, Hotel Dieu, Montreal.
Colonel E. Stanley Ryerson, Associate Professor of Surgery, Toronto University.
Capt. F. L. Thompson, Military Orthopædic Hospital, Toronto.
Mr. Edward Bott, Dept. of Psychology, Toronto University.
Dr. Wm. Goldie, Associate Professor of Medicine, Toronto University.
Mr. Benjamin Fenner, Technician, X-ray Dept., Toronto General Hospital.
Capt. Edward Ryan, Medical Officer, D. Unit, Toronto Military District.
Miss Ada McLaughlin, Masseuse, Military Orthopædic Hospital, Toronto.
Dr. Chas. J. Copp, Asst. Commissioner, St. John Ambulance Brigade, Overseas.
Mr. Samuel Price, Chairman, Workmen's Compensation Board.

Nurses and The Registration of Public and Private Hospital Nurses.

Sir Wm. Mulock, K.C.M.G.
Sir Edmund Osler.
M. H. Ludwig, K.C.
Miss Bella Crosby, Past President Graduate Nurses' Association of Ontario.
Miss Jean I. Gunn, Supt. Nurses' Training School, Toronto General Hospital.
Dr. Helen MacMurchy, Provincial Secretary's Dept.
Lieut.-Col. Herbert A. Bruce, M.D.
Miss Elisabeth G. Flaws, Supt. of Nurses' Training School, Wellesley Hospital.
Miss E. MacP. Dickson, Secy., Graduate Nurses' Assn. of Ontario.
Lieut-Col. F. W. Marlow, M.D.
S. A. Armstrong, Asst. Provincial Secretary.
Fred. C. Jarvis.
Dr. James Forster, Supt. Toronto Asylum.
Dr. J. A. Herthey, Owen Sound General Hospital.
Dr. A. T. Hobbs, Supt. Homewood Sanitarium, Guelph.
Dr. W. P. Caven.
Miss E. Ross Greene, Supt. of Nurses, Hospital for Incurables, Toronto.
Dr. H. B. Anderson.
Miss Helena Stewart, Public Health Division of Ohio State Board of Health.
Dr. Haven Emerson, Commissioner, Dept. of Health, New York City.
Mr. John Ross Robertson.
Miss Florence J. Potts, Supt. of Nurses, Sick Children's Hospital, Toronto.
Miss M. Ewing.
Mrs. Clutterbuck.
Dr. Helen MacMurchy.
Miss Agnes D. Carson, Supt. Detroit Home Nursing Association, Detroit, Mich.
Dr. Chas. J. Hastings, M.O.H., Toronto.
Miss Eunice Dyke.
Miss Elizabeth Hall.
Mrs. W. M. Peacock.
Miss Beatrice Ellis.
R. E. Mills, Chief of Division of Records and Statistics, Dept. of Public Health, Toronto.
Dr. Herman Biggs, Commissioner, New York State Dept. of Health.
Dr. M. Nicholl, Director of Public Health, Education, New York State.
Miss Agnes Nutting, Prof. of Nursing and Health, Teachers' College, Columbia University, New York.
Miss Annie E. Gooderich, Asst. Prof. of Nursing and Health, Teachers' College, Columbia University, New York.
Miss Ella R. Crandall, Executive Secy. of the National Organization for Public Health Nursing, New York.

Optometry—

J. C. Williams.
W. G. Maybee, President, Ontario Optometrical Assn.
G. Saporito, Vice-President Ontario Optometrical Assn.
E. M. Trowern, Secy. Ontario Retail Merchants' Assn. and of Optometrical Assn. of Ontario.
James A. Brodie, Toronto.
Dr. B. H. Whitney, Secy. Board of Regents in Optometry, State of Massachusetts, U.S.A.
Albert Myer, Secy. American Optical Assn.
C. A. Jarvis, Secy. Ontario Optometrical Assn.
Dr. Walter E. Lambert, New York City.

Dr. R. A. Reeve.
Dr. W. Arrell.
Dr. N. D. Buchanan.
Dr. H. B. Anderson.
W. E. Fannon, Director, Ontario Optometrical Assn.
W. J. Harvey.
J. C. McLean.
J. L. Rawbon.
Dr. Chas. Sheard, Prof. of Physics, Ohio State University.

Osteopathy—
Glyn Osler, Esq.
R. H. C. Cassels, Esq.
J. C. McConachie.
E. D. Heist, Ontario Association of Osteopathy.
G. A. Williams, President, Toronto Osteopathic Association.
R. B. Henderson, President, Ontario Association of Osteopathic Physicians.
W. E. Elfrink, Secretary, Illinois State Osteopathic Association.
E. R. Proctor, President, Chicago College of Osteopathy.
James B. Littlejohn, Surgeon in Chief, Littlejohn Osteopathic Hospital, Chicago.
David A. Mills, Asst. Dean, Chicago College of Osteopathy.
S. H. Calderwood, President, Medical Board of Massachusetts.
W. Banks Meacham, President American Osteopathic Association.
H. L. Chiles, Secretary, American Osteopathic Association.
A. G. Hildreth, President, Still-Hildreth Sanitarium, Macon, Mo.
O. J. Snyder, President Board of Osteopathic Examiners for State of Pennsylvania.
A. M. Flack, Dean, Philadelphia College of Osteopathy.
J. Ivan Dufur, Director, Philadelphia College of Osteopathy.
M. F. Hulett, Osteopathic Examining Board, Ohio, U.S.A.
S. P. Ross, Ex-President, Pennsylvania State Osteopathic Association.
C. T. Muttart, Prof. of Osteopathic Therapeutics, Philadelphia College of Osteopathy.
Frank B. Kann, Member Board of Osteopathic Examiners, State of Pennsylvania.
Miss Grace M. Haskell, Registrar, Chicago College of Osteopathy.
Wm. R. Parke, Ontario Institute of Osteopathy.
B. B. Dutton.

Criticisms of Flexner Report (Evidence)—
C. H. Amsden.
Jas. E. Horning.
G. Garnett Elliott.
Norman Neilson.
Geo. DeJardine.

Welfare Work (United States)—
Alexander Fleisher, Supervisor, Welfare Dept., Metropolitan Life Insurance Co., New York.

Status of "Irregular" Cults in United States in Relation to Medicine—
Dr. Augustus S. Downing, Asst. Commissioner for Higher Education, New York State.
Dr. Royal S. Copeland, Dean, New York Homeopathic Medical College.
Dr. Norman D. Mattison.
Dr. J. Maurice Lewi, formerly Secretary New York State Board Medical Examiners.
Dr. S. W. Lambert, Dean, Medical Faculty, Columbia University, New York.
Mr. Abraham Flexner, Asst. Secretary General Education Board, Carnegie Foundation.
Dr. N. P. Colwell, Secretary of Council on Medical Education, American Medical Association.
Dr. St. Clair Drake, Secretary State Board of Health, Illinois, U.S.A.
Mr. Thos. Hogan, Attorney for Illinois State Board of Health.
Dr. Alex. Craig, Secretary, American Medical Association.
Dr. Arthur D. Bevan, Chairman, Council on Medical Education, American Medical Association.
Dr. Lewellys F. Barker, formerly Professor of Medicine in Johns Hopkins University, and immediate successor there of Sir William Osler.
Dr. Geo. H. Matson, Secretary, Ohio State Medical Board.
Dr. J. A. Baldy, President Bureau of Medical Education and Licensure for State of Pennsylvania.
Dr. John Ferguson, Toronto.

Dr. Henry S. Pritchett, President of the Carnegie Foundation for the Advancement of Teaching.
Dr. Herman Biggs, Commissioner, New York State Department of Health.
Dr. M. Nicholl, Director of Public Health Education, State Department of Health, New York.

Homeopathy—

Dr. C. T. Campbell, London, Ont.
Dr. Wickens, Hamilton.
Dr. Chas. E. Jarvis, London.

Christian Science—

Mr. A. W. Holmested.
I. F. Hellmuth, K.C.
W. S. Mattox, Boston, Mass.
Judge Clifford P. Smith, Boston, Mass.

Drugless Physicians—

R. C. Barklie, London, Ont.
H. V. Caton, "
A. Macfie, "

Manotherapy—

A. T. Colville.
Miss M. C. Valens.
Miss E. W. Maxwell.
Miss Hattie E. Derby.
Adam S. Beuglas.

Chiropractic—

Ernst DuVal, President Canadian Chiropractic College, Hamilton.
Emerson L. Burrill, Treasurer Canadian Chiropractic College, Hamilton, *pro tem.*
S. H. Bradford, K.C.
A. H. Backus, Aylmer, Ont.
B. J. Palmer, Principal, Palmer School of Chiropractic, Davenport, Iowa.
E. J. Chattoe.
Geo. W. Doxsee, President, Canadian Chiropractors' Association.
David Galbraith, Ontario Chiropractors' Association.
W. J. Ellison, Canadian Chiropractors' Association.
D'Arcy McLean, President, Dominion Chiropractors' Association.

LIST OF PLACES VISITED.

Hamilton, Ont. (twice).
London, Ont.
Kingston, Ont.
Ottawa, Ont.
Montreal, P.Q. (twice).
Albany, N. Y., U.S.A.
Boston, Mass. (twice).
Hartford, Conn.
New York City (three times).
Chicago, Ill.
Philadelphia, Penn. (twice).
Baltimore, Md.
Columbus, O.
Detroit, Mich.

LIST OF INSTITUTIONS VISITED.

University of Toronto (Buildings in connection with Medical Education).
Toronto General Hospital, twice (and Electro and X-ray Equipment).
Dr. DuVal's College of Chiropractic, Hamilton, Ont.
Dr. Colville's College of Manotherapy, Hamilton, Ont.
Queen's University, Medical Buildings, Kingston, Ont.
Western University, London, Ont.
McGill University, Buildings of Medical Faculty, Montreal, P.Q.
Royal Victoria Hospital, Montreal, P.Q. (twice).
Hotel Dieu, Electric Equipment, Montreal.
Laval University, Buildings of Medical Faculty, Montreal.
Chicago College of Osteopathy, Chicago, Ill.
American Medical Association Offices, Chicago, Ill.
University of Pennsylvania, Philadelphia, Pa. (Electro and Hydrotherapy Dept.).
The Johns Hopkins Hospital, Baltimore, Md. (Electro and Hydrotherapy Dept.).
Toronto Technical School.
Hart House, Toronto.
Massachusetts General Hospital (Zander Room).
Military Orthopædic Hospital, Davisville Avenue, Toronto.

LIST OF BOOKS, PAMPHLETS, ETC., SUBMITTED WITH REPORT.

Physical Therapy—

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Report for 1916, Workmen's Compensation Board (Ontario).
British Health Resorts in Peace and War, by R. Fortescue Fox, M.D.
Electro and Physiotherapy, Hotel Dieu, Montreal.
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Report of Interallied Conference for the Study of Professional Re-education of Disabled Soldiers, Paris, May, 1917.
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Mechanical Vibration, by M. L. H. Arnold Snow, M.D., New York.

Osteopathy—

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Directory of American Osteopathic Association, 1914-15.
List of Ontario Osteopathic Physicians.
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The Osteopath's Aims and Duties.
Osteopathy, the Science of Healing by Adjustment.
A Layman's View of Osteopathy.

Prospectuses of the following Schools:

American School of Osteopathy, Kirksville, Mo.
Still-Hildreth Sanitarium, Macon, Mo.
Chicago College of Osteopathy, 1915-16.
Philadelphia College of Osteopathy, 1916-17.

Central College of Osteopathy, Kansas City, Mo., 1915-16.
College of Osteopathic Physicians and Surgeons, Los Angeles, Cal., 1915-16.
A. T. Still Research Institute Bulletin.
A. T. Still Endowment Fund Circular.

Chiropractic and Manotherapy—
Chiropractic, by Alfred Walton.
Legal Aspects of Chiropractic.
The Doctrine of Chiropractic, by E. DuVal.
Chiropractic, by C. P. McKay.
Chiropractic Questions and Answers, by C. P. McKay.
The Science of Chiropractic.
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The Progressive Chiropractor, August, 1914.
Announcement, Oklahoma Institute, 1910-11.
Announcement, Universal Chiropractic College, Davenport, Iowa, 1910-11, 1916-17.
Announcement, Palmer School of Chiropractic, Davenport, Iowa, 1912, 1916-17.
An Invisible Government, by B. J. Palmer.
Extracts from Evidence, Rex v. Wallace.
Pamphlet of American College of Mechanotherapy.
The Authorized Version of Manotherapy, by A. T. Colville.

Homeopathy—
Hospitals and Sanatoriums of the Homeopathic School of Medicine, 1916.

General—
Legislation Concerning the Right to Practise Medicine, by A. S. McKenzie, M.D
Medical Education in the United States, 1916.
Quackery, by J. P. McMurrich.
Medical Heresy, by Dr. A. F. McKenzie.
Where Chiropractors are Made, by Dr. Duhigg.
Making Doctors While You Wait, by Dr. Geo. Creel.
One Standard of Entry to the Practice of the Healing Art.
Monthly Bulletins: August, 1915; November, 1915; April, 1916; September, 1915; January and February, 1916; published by the State Medical Boards.
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The Teaching of Clinical Medicine, by L. F. Barker.
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Christian Science—
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Dentists—
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Report of the Massachusetts Board of Optometry (1915).
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Constitution, By-laws, etc., of Optometrical Association of Ontario.
American Medical Association Bulletin, Opposition to Optometry, November, 1910.
Report of Third Annual Convention, Optometrical Association of Ontario, May, 1917.
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Standardization of Financial Statements for Visiting Nurse Associations, by Lee Frankel, New York.
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The Practical Nurse Question, by Charlotte A. Aikins.
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Organization of Visiting Nurse Associations, by Mary S. Gardner.
Development of State Public Health Nursing, by R. G. Patterson.
The Public Health Nurse, by M. Powers, M.O.H., Rockland, Ont.
How Could a Rural Municipality Employ a Public Health Nurse? By J. F. Hanley, M.O.H., Almonte, Ont.
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A Sounder Economic Basis for Training Schools for Nurses, by Adelaide Nutting.
Health Insurance and Public Health Nursing, by Olga S. Halsey.
Opportunities in the Field of Nursing.
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Constitution and By-laws of the Graduate Nurses' Association of Ontario.
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College of Physicians and Surgeons—
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Universities—
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Faculty of Applied Science, 1917-18, University of Toronto.
Queen's University Calendars, 1916-17.
Faculty of Medicine, 1917-18.
Western University Calendars, Faculty of Medicine, 1915-16, 1917-18.
Laval University, Montreal, Announcement, 1915-16.
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Manitoba Medical College Calendar, 1914-15.
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Report of Committee on Standards of Education, 1916.
Constitution, Rules and Regulations of same.
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Regulations of Royal College of Surgeons in England.
Recommendations of General Medical Council as to Professional Examinations.
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Laws and Board Rulings Relating to the Practice of Medicine in the United States and Elsewhere.
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Report (1914) Board of Registration in Medicine, Massachusetts.
Rules and Information as to Medical Education and Licensure, State of Pennsylvania.
Statute of Ohio relating to Medicine.
Laws of New York relating to Medicine, June, 1915; June, 1916.

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